DOCUMENT RESUME

ED 173 558 CE 020 371

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TITLE Eliminating Sex-Role Stereotyping in Vocational Education: A National and State Perspective.
SPONS AGENCY Michigan State Dept. of Education, Lansing. Vocational-Technical Education Service.
PUB DATE Mar 79
NOTE 36p.; For a related document see CE 020 042

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Cultural Factors; Equal Education; Federal Legislation; Females; Males; *National Surveys; *Secondary Education; Sex Discrimination; Sex Role; *Sex Stereotypes; Social Influences; Socialization; State Legislation; *State Surveys; *Vocational Education
IDENTIFIERS Michigan

ABSTRACT

This report explores sex role stereotyping and sex bias in national and state (Michigan) secondary vocational education program from several perspectives. Section I states the problem and gives the purpose of the report. Section II reviews the sources of sex role stereotyping in the legal, social, and cultural environments. Sections III and IV examine sex bias and role socialization in vocational education from a national and state perspective. Section V compares enrollment patterns in Michigan and in the nation. Section VI explores the effects of sex role stereotyping in vocational education programming on the national and state labor markets. Section VII defines the relationship of economic stability to vocational preparation. The report concludes with a series of suggested planning directives to eliminate sex role stereotyping in vocational education in Michigan. An appendix presents brief descriptions of state and federal legislation to prohibit sex discrimination. Tables of statistical data appear throughout the report. (Author/LMS)

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ED173558

ELIMINATING SEX-ROLE STEREOTYPING IN VOCATIONAL EDUCATION:

A National and State Perspective

Expanding Vocational Education and Training Options for Women and Men in Michigan

Submitted by
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March, 1979

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March, 1979

This report was prepared pursuant to a grant from the Michigan Department of Education, Contract Account Number 110-31-6151. The report does not, however, necessarily reflect official positions or policies of the Michigan Department of Education.

ACKNOWLEDGEMENTS

The contributions of Allene Dietrich, Project Director, and Dr. Margaret James-Neill, Project Training Associate, to the development of this document were significant. Portions of materials prepared by these persons have been incorporated in this report. Dr. Nancy Carlson was also instrumental in reviewing materials. The secretarial and administrative capability of Mary Milsom to pull together loose ends and to meet deadlines was invaluable.

Our sincere appreciation is also extended to the following individuals who served as Advisory Board members to the project during the first year. Their advice as the project moved through various stages of development was most helpful.

Avery Baker
Equal Opportunity Officer
Mich. Employment Security Comm.

William Bowditch
Special Needs Supervisor
Warren Public Schools

Al Bracciano
Director of Vocational Education
Warren Public Schools

Celess B. Chapman
Board of Educ. Tech. Assistance Team
Detroit Public Schools

Dr. Raymond Dannenberg, Chrprsn.
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Warren Consol. Schools

Dr. Marilyn Steele
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Mott National Foundation

Suzanne Vancil
Manager of Education
Rapistan Inc.

Dorothy Yancey
Supervisor of Career Guidance
Pontiac Public Schools

David K. Young
Salaried Personnel
General Motors

Needless to say, a project of this scope could not have been carried out without direction, consultation, and support from the Michigan Department of Education. To each of the following individuals, we are most grateful:

William Weisgerber, Supervisor
Prevocational and Professional Development Unit
Vocational-Technical Education Service
Michigan Department of Education

Dr. John Howard, Jr. (State Project Monitor)
Vocational Curriculum Consultant
Vocational-Technical Education Service
Michigan Department of Education

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PREFACE

Federal mandates to eliminate sex role stereotyping in vocational programs across the nation have called attention to the need for all states to begin to address this issue. Under federal legislation each state is required to submit to the federal government a Five Year Plan which outlines the objectives, outcomes and methods whereby sex role stereotyping will be reduced in vocational programs in that state.

The response of Vocational Technical Education Service (VTES), Michigan Department of Education, to this mandate was to issue a Request for Proposals in August 1978. The Request for Proposals outlined three objectives which were to be addressed in the first year of Michigan's Five Year Plan:

(1) identify the extent of sex role stereotyping in Michigan vocational education programs,

(2) analyze existing vocational curriculum and career guidance materials for sex role stereotyping,

(3) develop materials, plan and pilot test a model awareness program on sex role stereotyping in vocational education programs.

The Center for Women's Services, Western Michigan University, responded to the Request for Proposals. One of the Center's proposed activities to assist the State of Michigan in meeting its first year objectives was to conduct two levels of research. The purpose of the research was to examine sex role stereotyping and sex bias in secondary vocational education programming in Michigan. Approaching this examination with a five-strand design, the project staff researched the sources and manifestations of sex role stereotyping in (1) educators' perceptions of the problems of sex role stereotyping, (2) vocational instructional resources, (3) enrollment, (4) staffing and structural patterns in vocational education, and (5) social, legal and cultural environments.

Two levels of research were operationalized throughout the course of the year. On one level, field research was undertaken to examine educators' perceptions of sex bias in vocational programs. In twenty school systems, interviews were conducted with 348 Michigan school personnel, over half of them vocational teachers, vocational administrators and counselors. This field research satisfied the first strand of the research design. The results of the first strand research are presented in *Sex Role Stereotyping in Vocational Education: A Report on the Perceptions of Michigan Educators*.

To satisfy the requirement of the second strand area of curriculum and career materials, a critical review of existing vocational and career guidance materials for evidence of sex bias was completed. Executive summaries of these reviews were presented in *Review of Model Career Guidance Program for Michigan Community Colleges and in Career Exploration Package: Grades 10-12 Review for Evidence of Sex Role Stereotyping*.

In addition, the field research included a review of 359 career and vocational learning resources currently in use at the twenty secondary school sites. The results of this materials review were summarized and reported in *Report on the Identification of Sex Biases in Vocational Education Instructional Materials and Resources*.

The examinations of the third, fourth, and fifth strands were conducted inhouse through a review of the literature and through data collection and analysis. Project staff explored the manifestations and sources of sex role stereotyping in vocational education enrollment, staffing/structure, and in the legal, social and cultural contexts.

This document summarizes the findings from the examination of the third, fourth, and fifth strands. Where appropriate, brief findings from the field research have been included. However, the major focus of this report centers on the state of the art review.

Readers interested in detailed findings from the field research are directed to the preceding reports. All of the reports are available from the Center for Women's Services, Western Michigan University, Kalamazoo, Michigan 49008.

Section I
INTRODUCTION

Statement of the Problem

> Nowhere is the [the] disparity between reality and myth as the foundation for social policy more evident than in regard to the large-scale movement of women into the labor force – a phenomenon that could have consequences of immense magnitude for the nation. Its effects on the economy, on the labor market, on family welfare and on community life are already apparent. It has become both an aspect of change and a prime mover for further change. Yet in our failure to take account of this occurrence may lie the cause of hardship and inequity for increasing numbers of people, and the potential for considerable social unrest.[1]

Thus begins the annual statement of the President of the Carnegie Corporation with an identity of a critical discrepancy between a social myth and an economic reality in our country. Women in the labor force and women in education have joined the ranks of those in the movement directed toward eliminating sex discrimination in all facets of our social, political, cultural and economic endeavors. It is important to note that Pifer sees the consequences of the ignorance of this discrepancy affecting all facets of society, only beginning with economics and family life.

Purpose of the Report

The purpose of this report is to explore the nature and extent of sex role stereotyping and sex bias in both national and state secondary vocational education programs from several perspectives which Pifer has addressed in his comments. In Section II of the report, the sources of sex role stereotyping in the legal, social and cultural environments are reviewed. Examined in Sections III and IV from a national and state perspective is sex bias and role socialization in vocational education. Section V offers a comparison of enrollment patterns in Michigan and in the nation. The effects of sex role stereotyping in vocational education programming on the national and state labor markets are explored in Section VI. Section VII defines the relationship of economic stability to vocational preparation. The report concludes with a series of suggested planning directives to eliminate sex role stereotyping in vocational education in Michigan.

1. *Annual Report*, Carnegie Corporation of New York, 1976, p. 3.

Section II
THE LEGAL, SOCIAL AND CULTURAL CONTEXTS OF SEX BIAS

Overview

Many societal factors influence the vocational choices elected by students. Among them are socialization processes, students' attitudes, pressure from the peer group, the educational environment, educational resources and tools, the legal environment, and influences in the home and family. The patterns of sex bias and role stereotyping in vocational education are a reflection of the society which the students, educators, and the American public have sustained for centuries.

Socialization Processes

One primary determinant, borne out by empirical research, is the value attached to the "appropriate" role and life patterns for females and males. Research by Broverman and Peck demonstrated that various groups of professionals characterize mentally healthy adults as having the same characteristics as mentally healthy males. Mentally healthy females, on the other hand, were perceived to have opposite, divergent characteristics from mentally healthy adults.[2] Studies by Lunneborg and Minuchin in the early 1970's concluded that young males and females have more positive opinions of masculine characteristics, and more negative opinions of feminine characteristics. Other researchers also report that many females but fewer males indicate that (at some time) they would have preferred to have been born a member of the opposite sex.[3] Thus the normative social value attached to masculinity is positive and idealized.

Generally those characteristics associated with masculinity are those rewarded and sanctioned by the economic and social systems: competition, aggression, independence, and physical prowess. Traits associated with femininity are those which are infrequently rewarded or negatively valued: fear, anxiety, weakness and tenderness. These values are translated directly into dollars in the labor market. Men hold jobs which are socially prescribed to be appropriate for males and for which they are paid more than women because male occupations are traditionally perceived to be tough, dirty, physically demanding and problem-solving oriented.

Student Attitudes

A recent study by Gonder confirms that high school students in significant portions still think that women do not belong in the work force, much less in non-traditional occupations. Only half of the students in the Gonder study reported that women should have the choice of working outside the home.[4] However, a review of the literature regarding students' occupational goals reveals some indication that young female adults today are entertaining thoughts of non-traditional life or work roles. For example, in the 1973-1974 survey by the National Assessment of Educational Progress, only 3% of female 17 year olds selected "Housewife" as their first choice for a career. This finding suggests that 97 out of every 100 17-year old women expect to be employed outside their homes, even if they marry and bear children.[5]

In another survey sponsored by the American Council on Education, less than one-third of all 1976-1977 college freshmen believed that "women's activities are best confined to the home."[6]

By way of contrast, a 1977 study of high school graduates, conducted by the University of Michigan's Institute for Social Research, revealed that although 9 out of 10 teenage women plan on careers outside the home, they plan to seek jobs already dominated by women. According to the U of M study, they are aiming for lower-paid fields like teaching, clerical and social work, while the young men plan to turn themselves into high-priced trade workers, technicians and executives. The study also concluded that most young females believe they want to stay home full-time – at least when their children are young.[7]

Despite research which demonstrates that student attitudes toward life and work roles may be shifting into a more non-traditional frame of reference, analyses of enrollment trends in vocational and technical programs indicate that changes in student attitude have not as yet significantly translated into academic choices in vocational education programs at the secondary level.

The presence of women is still slight in many of these programs and is increasing only gradually as compared to male enrollment. Boyer noted that some institutions have made a certain amount of effort to attract women students to these programs with only modest success.[8] However, those institutions which have made considerable efforts have rather uniformly been able to increase their enrollments of women. Similar successes have been reported in the CETA Title II programs funded in Boston and Denver.[9] However, the clustering of females and males into traditional occupational fields at the post secondary level appears to be the rule, rather than the exception, to the current state of the vocational affairs in post secondary education.

The results of a national survey conducted by the American Association of Community and Junior Colleges and its affiliated council, the American Association of Women in Community and Junior Colleges, show that most women continue to enroll in traditional programs – secretarial science, nursing and child care aide – creating occupational segregation in low-paying jobs with few options for upward mobility. The study also revealed that few women have accurate information concerning the income potential for various technical and vocational careers. Among women students who aspire to management or technical positions, few plan their courses and curriculum accordingly.[10]

2 Broverman, et al. "Sex Role Stereotyping and Clinical Judgments Of Mental Health." *Journal of Consulting and Clinical Psychology*, 34:1 (1970).

3 Lunneborg "Stereotypic Aspects in Masculinity-Femininity Measurement," *Journal of Consulting and Clinical Psychology*, 34:1 (1970); Minuchin "Sex Differences in Children: Research Findings in an Educational Context," *National Elementary Principal*, 46:2 (1966); Peck "The Male Sex Role: Definitions, Problems and Sources of Change," *Journal of Social Issues*, 32:3 (1976).

4 Gonder *A Woman's Place*. National Assessment of Educational Progress, Denver June 1977.

5 *Project on the Status and Education of Women Newsletter*. Project on the Status and Education of Women, Washington, D.C., June 1977.

6 *Ibid*

7 *Detroit Free Press*, September 22, 1978, Section C.

8 Boyer "Women: Are Technical-Occupational Programs Attracting Them." Women's Equity Action League, Education and Legal Defense Fund, March 1974.

9 *Women in Non-Traditional Jobs: A Program Model: Denver-Better Jobs*. Women's Bureau, U.S. Department of Labor, 1978.
Women in Non-Traditional Jobs: A Program Model: Boston-Non-Traditional Occupations Program for Women. Women's Bureau, U.S. Department of Labor 1978.

10 *Project on the Status and Education of Women Newsletter*. Project on the Status and Education of Women, Washington, D.C., June 1978.

The researchers in this national study concluded that women can enter and succeed in semi-professional and technical training programs once reserved "for males only" if there is improved access and if current admissions practices are revised to encourage the enrollment of non-traditional students. The study also noted that recruitment programs have resulted in a marked increase in the enrollment of women in these programs in non-traditional fields at the post secondary level.

Similarly, in a study of 830 public supported colleges having technical-occupational programs, Boyer noted a strong correlation between active recruitment efforts and increased enrollment of women in these programs.[11]

Pressures from the Peer Group

In response to the increased pressure to adapt stereotyped life and work roles, young women and men experience conflict. Horner, Nuffziger, O'Leary and Serbin reported that males and females experience conflict between their ideal self and the stereotyped characteristics generally associated with being masculine or feminine.[12] Gray discovered a strong correlation between young males who scored high in sex-stereotyped behaviors and attitudes, and high levels of anxiety.[13] Though both males and females face the pressure of socialization, there is evidence of more pressure among males to conform to the masculine stereotype earlier in life than for females to conform to the feminine stereotype. Research also suggests that it appears to be more difficult for males than females to unlearn stereotyped behaviors.

One of the ways role conflict in young females and males is heightened is through the peer group. In comparison to female peer groups, adolescent male peer groups generally have higher occupational aspirations and higher expectations for achieving their career goals. Conversely, there is a trend for young females' IQ scores to decline in late adolescence and early adulthood. Young females declared expectations to success are lower than their actual achievements. Girls underestimate their ability, while boys are more realistic and accurate in their self-concepts, with a slight trend to over estimate their talents.

Adolescent females, in contrast, show a decline in career commitment, coupled with greater expectations of being married and becoming a homemaker. Increasingly limiting their occupational choices to traditionally female fields, young women are also reported to indicate they feel males disapprove of intellectual women. Thus the peer bonds among males contribute to a more intensified, serious preparation for a work role, whereas the female peer group supports the aspiration of marriage and preparation for the roles of wife and mother, rather than a worker outside the home.

Research suggests that a major shift in social behaviors takes place between the elementary and secondary years for males and females. During the elementary years more males than females are reported to receive lower grades, fail grades, have more reading problems, receive more disciplinary actions and be referred for counseling. During adolescence more females than males begin to show a decline in academic achievement and academic ability, particularly in secondary mathematics and science classes wherein the number of female enrollees decreases significantly in comparison to female enrollment in these classes in the middle school years. Rosencrantz also concluded that more females than males are referred for professional counseling or seek it themselves during the teen years.[14] In summary teenaged women are reported to experience some of the same psychological and social conflicts which males experience during the preadolescent years.

Perhaps a cogent explanation for this phenomenon is that young people of both sexes tend to have most of their physical and emotional needs met earliest in life by females—mothers, aunts, day care staff, nursery school teachers, etc. In turn youngsters have less interactions with adult males than with adult females. Hartley postulates convincingly that behavioral and social problems evidenced by males in the elementary school years are a result of young males' lack of role models who demonstrate the specifics of what male behavior should be. She hypothesizes that to males, the only meaningful, visible guides for masculinity in our society come from the male peer group, and from somewhat older male youth who do not act out routinely non-traditional role behavior.

Hartley speaks of the conflict in role demands that the social structure imposes on young males:

> For a boy, the contact with, and acceptance by, his peers is tremendously important, because he has to look at them to fill in gaps in his information about his role as a male, and he has to depend on them to give him practice in it. Unfortunately, both the information and the practice he gets are distorted. Since his peers have no better sources of information than he has, all they can do is pool the impressions and anxieties they derived from their early training. Thus the picture they draw is at once oversimplified and overemphasized. It is a picture drawn in black and white with little or no modification, and it is incomplete, including only a few of the many elements that go to make up the role of a mature male . . . Unfortunately, it is almost all that many boys have to go by, and its power to induce anxiety is amply attested.[15]

Research by Braun and Nuffziger, among others, offers some evidence which accounts for the influence of the female peer group on adolescent female interests.[16] Generally less stringent demands are made on young girls than on young boys. Moreover, girls more gradually assimilate socially predetermined roles. As a result deviations from the feminine "norm" are less frequently punished and are accepted until the teenage years. Thus, within adolescent female peer groups comes the first consistently and harshly enforced rules for feminization. The years in secondary school are spent in preparation for a life role as wife and mother, with the female peer group as a source of information, support and encouragement.

As the enrollment data suggest, women lean toward non-wage earning consumer home economics programs or toward vocational fields that traditionally pay less and offer fewer career advancement opportunities. Reported by several researchers,

11. Boyer. Op. Cit.

12. Horner "Toward an Understanding of Achievement Related Conflicts in Women," *Journal of Social Issues*, 28 (1972); Nuffziger. "Development of Sex Role Stereotypes," *Family Coordinator*, July 1974; Serbin and O'Leary. "Sexual Bondage Begins in Nursery School," *Scientific American*, 1973.

13. Gray. "Masculinity-Femininity in Relation to Anxiety and Social Acceptance," *Child Development*, 28.2 (1957).

14. Rosencrantz, et. al. "Sex Role Stereotyping and Self Concepts in College Students," *Journal of Consulting and Clinical Psychology*, 32.3 (1968).

15. Hartley. "Sex Role Pressures and the Socialization of the Male Child," *Psychological Reports*, 5 (1959).

16. Nuffziger. Op. Cit.

such choices reflect the conservative estimates of female peer groups regarding their beliefs about working women and females' limited conception of career opportunities. Like much of the female adult population, adolescent females do not conceive of the economic realities they will face as adults who will, in nine out of ten cases, work at some point in their lives. A sense of cooperation and self esteem and self determination is nurtured by the male peer group. In contrast female peer groups encourage the development of interpersonal and social skills at the expense of intellectual and vocational training pursuits.

Both groups provide a source of values and stereotyped behaviors among its members. Peer groups reinforce highly sex stereotyped occupational choices, life roles and social behaviors. Data from the field research in this study tend to substantiate the proposition that the peer group is a strong influence on the vocational preparation of students.[17]

The Educational Environment

Another way in which role conflict for students is heightened is through the educational environment, for the school serves as a socializing agent for students and reflects traditional work and life roles of the larger society. Walum addresses this role of the school in her book, *The Dynamics of Sex and Gender: A Sociological Perspective*.

> But in addition to the parental acceptance of the school as the legitimate educator, the school is formally charged through law to educate the young. The school is one of the few institutions recognized as a legitimate agent of socialization. In effect, the school not only stands *in locos parentis* ("in place of the parents"), but as importantly *in locos societate* ("in place of the society"). Children are required to go to school, and the school is held accountable for teaching what the society values.[18]

Professional educators, teachers and administrators are products of the traditional socialization processes described earlier. Their education and training, typically, have not been designed to aid them in recognizing and/or reducing sex role stereotyping and sex bias in their own behavior, in curriculum materials, nor in the organization and administration of vocational education programs. Educators' values, behaviors and attitudes are also part of the "informal" curriculum – the means through which cultural/social values are transmitted *sub rosa*.

The public schools are predominantly female in the number of staff employed. While two-thirds of the teaching staff in our nation's schools are female, principals of most schools are male; similarly the higher the level of education, the fewer the number of women on the faculty and in administration.

In the teaching ranks male high school teachers slightly outnumber females. At the elementary level, however, women are predominant by nearly a five to one ratio. A 1975 survey by the National Association of Secondary School Principals revealed that women are also becoming increasingly rare as principals, accounting for only 7% of the high school principals, in comparison to 10% in 1965. The survey also found that while the number of women principals grew in suburban schools during this decade, it fell sharply in urban areas.

The long, steady decline in the number of women elementary school principals has been documented in several studies. In 1928, for example, women accounted for 55% of the elementary school principals, but by 1973 women were less than 20% of the grade school administrators. Women are even more rare among the 576 school superintendents in Michigan. Only 8 are female.

While statistics are unavailable on the national sex distribution of the instructional staff in vocational programs at the secondary level, female instructors in Michigan vocational education programs are seldom encountered in fields other than health, office, consumer homemaking and home economics related fields. Table I presents the make up of the staff by sex in Michigan vocational education programs in 1977.[19]

Table I
DISTRIBUTION BY SEX OF INSTRUCTIONAL STAFF IN MICHIGAN VOCATIONAL PROGRAMS IN 1977

Area	Male	Female	Total
Agriculture	204	7	211
Distributive Ed.	310	65	375
Health	10	150	160
HERO*	74	1032	1106
Office and Business	169	606	775
Trade and Industry	1203	50	1253
TOTAL	1970	1910	3880

*Home Economics Related Occupations

An examination of Table I reveals that just as female students are clustered in the office/business, home economics and health occupations, so the instructional staff is predominantly female. The same pattern is evident in traditionally male dominated fields of agriculture and trade and industry. It is significant to point out that though an equitable balance of females and males has been reported in 1977 student enrollment data in distributive education, the ratio of male to female instructors in this program was approximately five to one.

Table II offers the percentage distribution by sex of the instructors and students in Michigan in six of the occupational fields.[20]

Table II
DISTRIBUTION BY SEX OF STUDENTS AND INSTRUCTORS IN MICHIGAN VOCATIONAL PROGRAMS IN 1977

Program	Students		Instructors	
	M %	F %	M %	F %
Agriculture	77	23	97	3
Distributive Ed.	49	51	83	17
Health	12	88	6	94
HERO	30	70	7	93
Office and Business	28	72	22	78
Trade and Industry	84	16	96	4

As Table II indicates, only in the business and office program does the distribution of instructors approach a pattern similar to the distribution of the students. In this program 22% of the instructors are male, compared to the 28% male student population. Though the ratio of male to female students in the agricultural field is approximately three to one, only 3% of the teaching staff are females. Similarly, though 16% of the students enrolled in the trade and industry courses are female, only 4% of

17. *Sex Role Stereotyping in Vocational Education: Report on the Perceptions of Michigan Educators*. Center for Women's Services, Western Michigan University, 1978.

18. Walum. *The Dynamics of Sex and Gender: A Sociological Perspective*. Chicago: Rand McNally Publishing Company, 1977, p. 54.

19. Source: Michigan Department of Education, Vocational Technical Service Unit, 1978.

20. Ibid.

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the faculty are women. In the HERO program 30% of the students are male, in comparison to 7% male teaching staff. Thus it appears that the school system encourages traditional student vocational interest patterns through the role models presented by staff. Few non-traditional role models are evident in any occupational field.

Data on the make up of vocational education advisory councils among the states are currently unavailable. However, the Bureau of Occupational and Adult Education is planning to collect, for the first time, such information. Legal provisions encourage representative membership on advisory councils. Under Section 105 (a) 17 and 20 of the Vocational Education Amendments of 1976, membership on state advisory councils should "include one or more individuals who . . . (a) are women with backgrounds and experiences in employment and training programs, and who are knowledgeable with respect to the special experience and problems of sex discrimination in job training, and employment, and of sex stereotyping in vocational education, including women who are members of minority groups having special knowledge of the problems of discrimination in job training and employment against women in minority groups." U.S. Commissioner of Education Ernest Boyer's recent interpretation of this law means that if a state elects to appoint only one woman to Category 17, the woman must be a minority group member. Boyer stated, "In light of this interpretation, the Bureau of Occupational and Adult Education is in the process of notifying the advisory councils that a minority woman must be appointed to fill Category #17 to be in compliance with the law and the regulations."[21]

Michigan appears to have followed the intent of these legal guidelines for representation on the councils, as 10 of the 26 members of the State Advisory Council are female.

Educational Resources and Tools

The interpersonal relationships and interactions among students and teachers, and among students and counselors, are only one means of influencing vocational choice and interest. An equally strong influencer of students' vocational interests are educational tools.

For example, counselors' tools reinforce work role stereotypes. Vocational interest tests are often designed around male and female interests, with women being steered away from preferences for professions and fields stereotyped as men-only.[22] The result is that students continue to be funneled into conventional vocational fields and that students' career options may appear to be far more limited than they actually are.

Interest and aptitude tests with female and male scoring procedures support sex bias and stereotyping. Reporting in *Sex Role Socialization and Employment Realities: Implications for Vocational Interest Measurement*, Prediger and Cole comment:

> Although there are trade-offs one must make in choosing any approach to interest measurement, the most desirable course for the future seems clear to us. The price to be paid in the opportunity dominance approach—the suggestion of career areas which may be rejected as inappropriate because of internalized sex-role stereotypes or lack of opportunities—seem small indeed in comparison with the potential cost of adhering to the socialization dominance hypothesis—that is, frequent failure to identify otherwise suitable career options that do not conform to current sex-role stereotypes or employment distributions.[23]

Farmer and Bohn used a popular counseling tool, the Strong Vocational Test, to test female students twice. At first testing the females were directed according to the regular instructions which accompany the test. At second testing, the females were given role-playing instructions and asked to imagine that men liked intelligent women, and that women could manage career and families simultaneously. Under the second set of instructions, the career interest of the females tested rose in five occupations: artist, psychologist, lawyer, physician and life insurance salesperson.[24]

The Kuder Occupational Interest Survey, another commonly employed career interest instrument, has also been characterized as inherently biased in construction.

> The Kuder directs women who score high in the health professions to careers as dieticians, nurses, dental hygienists and physical therapists; careers in medicine, pharmacy and dentistry are proposed for men with similar scores. Further, only by leaving the sex item blank can women learn about their aptitudes for the most important and prestigious occupations, such as law, business, management, finance, government and medicine. Similarly, men can learn about their potential for the less demanding and less prestigious professions normally assigned to women only by leaving the sex item blank. That is, the test is designed to perpetuate the inheritance of occupations by gender regardless of abilities and motivations of its takers.[25]

There appears to be no empirical basis for designing interest/aptitude tests around sex differentials. In 1971 the Johnson O'Connor Research Foundation Human Engineering Laboratory issued a paper entitled *The Potential of Women*. Summarizing research conducted over the last fifty years on the measurement of inherent aptitudes and the differences in the level of measured ability among men and women, they reported no discernible sex differences in twenty-two aptitude areas. The researchers concluded:

> There is no field which can, with absolute assurance, claim to be the exclusive domain of either sex. Neither a girl nor a boy ought to be preemptorily dismissed from considering any endeavor solely because it has been the preserve of the opposite sex. In most occupations if positions were based solely on aptitudes, men and women would be found in approximately equal numbers.[26]

The O'Connor Foundation researchers concluded that out of twenty-two aptitude and knowledge areas, there is no difference attributed to sex in fourteen areas; women excel in six (finger dexterity, graphoria, ideaphoria, observation, silograms and ab-

21. *Federal Education Project Newsletter*. Federal Education Project Lawyer's Committee for Civil Rights Under Law; Washington, D.C., January 1978.

22. Frazer and Sadlek. *Sexism in School and Society*. New York: Harper and Row, 1973.

23. Prediger and Cole. *Sex Role Socialization and Employment Realities: Implications for Vocational Interest Measurement*. American College Testing Program, 1975, p. 7.

24. Farmer and Bohn. "Home Career Conflict Reduction and the Level of Career Interest in Women." *Journal of Counseling Psychology*, 17, (1970), 228-232.

25. Walum, Op. Cit., p. 56-57.

26. *Bulletin #8*. The Johnson O'Connor Research Foundation, Human Engineering Laboratory, Boston, 1971.

stract visualization); men excel in two (grip and structural visualization). In summary, interest and aptitude measurement tests designed around the assumption that there are inherent differences in aptitude attributable to sex are educational tools which restrict the vocational opportunities of students.

Another determinant of students' vocational interests are the vocational and curriculum materials in the schools. The manifestations of sex role stereotyping and sex bias in educational materials are frequently so deeply, yet subtly, woven into the language, context and illustrations of the materials that it is difficult for the inexperienced reader to detect the hidden socialization messages. Recent empirical research, however, has identified sex bias as a common thread running throughout curriculum resources.

For example, the analysis of elementary school textbooks by the Committee to Study Sex Discrimination in the Kalamazoo Public Schools is one of the benchmarks in the field.[27] Howe continued this research in secondary curriculum materials;[28] Birk, Copper and Tanney, who conducted similar investigations with career literature, examining standard occupational and vocational resources, supported earlier claims that career materials were sex biased.[29] Weitzman, Eifler, Hokada and Ross analyzed Caldecott Award books for evidence of sex role stereotyping.[30] O'Donnell also studied elementary social studies texts for sex role bias.[31] Career education materials have been found to be biased, based on sex and race, by Women on Words and Images.[32] A recent study of a random sampling of career guidance materials which was conducted by the Center for Vocational Education at Ohio State University confirmed that "to a greater or lesser extent, almost all of the materials were found to be stereotyped."[33]

Regardless of the focus of curriculum materials, empirical data demonstrate an overwhelming abundance of a majority of men actualizing the achievement ideals of American society. Women and minority males were either omitted in the materials reviewed in the research, underrepresented or represented in traditionally based roles. A review of educational measurement instruments suggests that with few exceptions, sex bias is most evident in guidance related materials. Only recently has the Strong Vocational Interest Inventory been modified from its traditional male/female scoring procedures.

The research assessing educational materials and interest and aptitude tools is increasing in frequency. Only in rare instances are the findings discrepant. Sex role stereotyping and bias in vocational education programming is supported by curriculum materials, career guidance tools, and interest measurement instruments. Stereotyped occupational choice is often subtly promoted through the use of these instructional and guidance resources in the schools.

The Legal Environment

The legal structure of our society has influenced sex bias and role stereotyping in the structure of the laws and in their enforcement. Until 1963 employed women were legally discriminated against in terms of their wages, overtime opportunities and fringe benefits. Currently there are a number of laws which prohibit sex discrimination. Appendix A offers a brief summary of such laws.

While Title VII was addressed to eliminating discrimination in the employment sector, Title IX of the Educational Amendments Act of 1972 was addressed to educational agencies receiving federal funding. Title IX prohibited discrimination on the basis of sex in any educational program receiving federal financial assistance. Though hailed as a long overdue mandate to eliminate sex discrimination in education and to remediate the past effects of discrimination, the law has had relatively little impact in reducing sex role stereotyping and sex discrimination.

The Project of Equal Education Rights concluded after an intensive study of the Title IX monitoring agency, Department of Health, Education and Welfare, that "the HEW office has consistently failed to investigate in a timely fashion, to promote regulations, and to make decisions on sex discrimination all across the country."[34]

A recent survey of seven vocational education plans showed most are in general compliance with the vocational education amendments of 1976.[35] However, a National Advisory Council on Women's Educational Program staff member who completed the evaluation stated that though there were "no glaring problems," there were many minor violations and a general reluctance to take bold steps to eliminate sex bias in vocational education programs. Joyce Paine reported that the evaluation showed few states are concerned about sex bias provisions under Title IX. In addition she noted that states revealed a "lack of commitment" to appointing more women to vocational education advisory councils, although Georgia was an exception. Further, some state plans displayed "confusion" over carrying out assessments of the vocational education needs of single heads of household, displaced homemakers, and other groups the law requires receive special attention.

The Project on Equal Education Rights (PEER) statements and those of the National Advisory Council on Women's Education Programs (NACWEP) staff member were echoed in a report issued by the presidentially-appointed NACWEP.[36] Investigating HEW's methods of collecting and analyzing data concerning females in education, NACWEP concluded that HEW has no uniform definition of sex bias, sex stereotyping and sex discrimination, that the agency lacks baseline information against which to measure progress, and that data are "inaccessible, non comparable or non existent." The study also found that within HEW, data frequently are not collected by sex, not tallied when collected, and often not analyzed for discriminatory patterns.

27. *Report of the Elementary School Textbooks Task Force Committee to Study Sex Discrimination in the Kalamazoo Public Schools*, Michigan Women's Commission, 1972.

28. Howe, Florence. "Sexual Stereotypes and the Public Schools," in *Women and Success*, William Morrow and Company, New York, 1973.

29. Birk, Tanney and Cooper. "Racial and Sex Role Stereotyping in Career Information Illustration," Paper presented at the American Psychological Association, August 1973 in Montreal.

30. Weitzman, Eifler, Hokada and Ross. "Sex Role Socialization in Picture Books for Preschool Children," *American Journal of Sociology*, 77 (1972).

31. O'Donnell. "Sex Bias in Primary Social Studies Textbooks," *Educational Leadership*, (1973).

32. Women on Words and Images. *Dick and Jane as Victims: Sex Stereotyping in Children's Readers*. Women on Words and Images, Princeton, 1972.

33. *Career Guidance Materials: Implications for Women's Career Development*. Center for Vocational Education, Ohio State University, 1974, p. ix.

34. *Stalled at the Start: Government Action on Sex Bias in the Schools*. Project on Equal Education Rights, NOW Legal Defense and Education Fund, Washington, D.C., 1977.

35. *Report on Educational Research*, Capitol Publications, Washington, D.C., March 2, 1978.

36. *Problems in Assessing the Impact of Education Division Programs on Girls and Women*. National Advisory Council on Women's Educational Programs, October, 1977.

Other agencies designed to provide legal redress for complaints alleging sex discrimination in education or employment also have poor track records. The Equal Employment Opportunity Commission (EEOC), the Office of Civil Rights (OCR) and the Michigan Civil Rights Commission (MCRC) at present have a tremendous backlog of cases. An immediate or near-immediate, thorough investigation of an alleged Title VII or Title IX violation is highly irregular. Redress through the courts provides a more immediate solution, though the financial constraints prohibit most persons from choosing this route. Thus though patterns of practices and policies based on sex which have led to restricted options and opportunities in vocational choice for students are illegal, these patterns persist in practice because of ineffective federal, state and local monitoring procedures.

Influences in the Home and Family

The home can also be a strong influence on students' vocational choice. The socialization of children begins with the first group of persons with whom they live. Within the family, children learn the social knowledge necessary to participate in relationships outside the home. Those artifacts which promote role socialization in the home include toys, clothes, books, and games. Wallum summarizes the impact of the home and family on a child's perceptions of gender appropriate roles:

> Within the context of a primary group, the child begins to learn the most central, basic, and personal feelings about the nature of gender differences, the importance of such differences, and gender expectations. These ideals are the most relevant to the child's subsequent gender behavior and the most difficult to contravene. So intense and striking, or subtle and pervasive are these primary experiences in childhood that to violate them as adults is difficult, uncomfortable, improbable, and in some cases, psychologically impossible. To choose to act in ways we learned were gender-inappropriate during our years of greatest vulnerability is to potentially choose to lose the sense of self and belonging we knew as children. Or, so subtle and pervasive are these teachings . . . we don't even know we are acting a certain way until we violate it.[37]

As children mature, the role of family as a socializing force is gradually replaced by other external socialization agents, especially the educational system. However, the effects of the social prescriptions learned within the family role models have, in many cases, been identified as determinants of occupational choices among women.

According to Pamela Frazee, a Virginia researcher who has been researching young women in non-traditional occupations for the U.S. Office of Education, women who go into traditional occupations are far more likely to feel that their choices were influenced by their parents, particularly their mothers. On the other hand, women who go into non-traditional vocations tended to rate each parent's influence equally. They also felt their own interest in the job far out-weighed all other factors – parent, pay ability and promotion opportunities.[38]

Similar findings have been reported recently by Rosenfeld, who studied intergenerational occupational mobility within several female populations. She concluded that the mother's occupation was a significant dimension of women's intergenerational mobility. "Whether or not the mother worked outside the home and what occupation she held, given that she was employed, affect daughter's location. In other words, mother's work matters for daughter's occupational destination." Rosenfeld's research is noteworthy in that previous studies in this area have focused on women's mobility from their father's occupational positions or focused on the process of socioeconomic attainment. The results of the Rosenfeld research indicate that

> . . . especially as more women find employment outside the home, those concerned with the process by which women find their places within the occupational structure should consider the impact of mother's as well as father's occupation on daughter's occupation. Further, it is possible that mother's occupation is associated with son's occupation as well as daughter's.[39]

Section III
EVIDENCE OF SEX BIAS AND ROLE STEREOTYPING IN NATIONAL VOCATIONAL EDUCATION ENROLLMENT

Overview

As at other levels of educational programming, and as in various educational services, sex bias and role stereotyping in secondary vocational education reflect our cultural, social and economic predisposition to favor males and "masculine" characteristics. National student enrollment data for 1976 demonstrate the power of cultural and social norms to shape student choices into traditional patterns. Table III offers the national enrollment data for males and females in the eight major vocational program categories in 1976.[40]

Table III
NATIONAL ENROLLMENT OF MALES AND FEMALES IN VOCATIONAL EDUCATION PROGRAMS IN 1976

Program	Female	%	Male	%
Agriculture	109,951	10.4	949,766	89.6
Distributive Ed.	366,705	40.7	533,899	59.3
Health	476,802	69.6	208,102	30.4
Consumer/Homemaking	2,688,807	76.5	826,235	23.5
HERO	349,932	74.2	121,357	25.8
Office/Business	1,907,146	61.2	1,207,546	38.8
Technical	44,135	9.1	440,672	90.9
Trade/Industry	338,389	10.9	2,771,561	89.1

As Table III indicates, females are predominant in the traditional areas of Health, Consumer Homemaking, Home Economics Related Occupations and Office/Business. Males are clustered in the areas of Agriculture, Technical and Trade/Industry. Only in the Distributive Education program does the enrollment of males and females approach equity, with 40.7% representation of females and 59.3% males.

However, in some fields the gap in the balanced enrollment of males and females appears to be narrowing. For example, male enrollment at the national level has steadily increased in the fields of Health, Consumer Homemaking, Home Economics Related Occupations, Office/Business and Distributive Education. Also the percentage of females enrolled in Agricultural

37 Walum, Op. Cit.

38 *Detroit Free Press*, September 22, 1978, Section C.

39 Rosenfeld, "Women's Intergenerational Occupational Mobility" in *American Sociological Review*, 43, (1978), 36-46.

40 The source for all national enrollment data is *Summary Data Vocational Education, Fiscal Year 1976*, Bureau of Adult Occupational Education, Division of Vocational and Technical Education, Washington, D.C. The source for all state enrollment data is Vocational Technical Education Service, Michigan Department of Education, 1977.

programs has almost doubled over the past four years. However, it is significant to note that in comparison to 1972 national enrollment data, statistics reflect a decrease in 1976 in the percentage of female students enrolled in Trade/Industry and Technical vocational fields.

A closer inspection of the occupational clusters within the eight vocational programs reveals that despite stronger representation of non-traditional students in some occupational fields, one or the other sex is underrepresented, depending upon the nature of the class or course emphasis.

Agriculture

About one-third of all females in the Agriculture program are enrolled in horticulture classes. Another 40% of the female students in this program are enrolled in agricultural production. The proportion of male to female students in other agricultural courses, such as forestry and agricultural supplies/services, is approximately ten to one, as Table IV indicates.

Table IV
NATIONAL ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE AGRICULTURE FIELD IN 1976
N = 109,951 Females

Program	Total no. of students	Total no. of females	% females in program	% females in Agriculture Field
Ornamental horticulture	118,370	37,906	32.0	34.5
Agricultural production	575,085	44,500	7.7	40.5
Agricultural resources	28,355	3,631	12.8	3.3
Agricultural mechanics	147,832	4,053	2.7	3.7
Other	125,386	14,314	11.4	13

Distributive Education

Of all females enrolled in the Distributive Education program, the greatest majority (40%) are taking general merchandising classes. Females constitute over two-thirds of the students enrolled in apparel and accessories; fifty-seven percent are in food services programs. In the real estate and insurance courses, females make up less than one-third of the enrollees. Table V presents the enrollment of females in selected Distributive Education programs.

Table V
NATIONAL ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE DISTRIBUTIVE EDUCATION FIELD IN 1976
N = 366,705 Females

Program	Total no. of students	Total no. of females	% females in program	% females in Dis. Ed. Field
General merchandising	290,161	128,328	44.2	40
Real estate	131,999	34,056	25.8	9.3
Food services	47,458	27,093	57	7.4
Apparel and accessories	25,344	18,052	71.2	5
Other	122,924	52,294	42.5	14.3
Finance and credit	55,296	25,588	46.3	7
Insurance	14,293	4,354	30.5	1.2

Health

As Table VI demonstrates, of all females taking classes in the vocational health field, over 60% are enrolled in the nursing curriculum. Ninety-two percent of the enrollees in the dental hygienist program are also female. A more equitable balance of male and female enrollment is reflected in radiologic, inhalation therapy and mental health technological courses. It is significant to note that in general males are predominant in more specialized health programs, such as dental lab technology, medical emergency technician, inhalation therapy and mental health technology.

Table VI
NATIONAL ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE HEALTH FIELD IN 1976
N = 476,802 Females

Program	Total no. of students	Total no. of females	% females in program	% females in Health Field
Nursing (associate degree)	104,939	86,670	82.6	18.2
Nursing assistant (aide)	116,622	84,357	72.3	17.7
Practical (vocational) nursing	98,294	84,729	86.2	17.8
Inhalation therapy technician	8,748	4,086	46.7	.9
Medical lab assisting	15,871	11,272	71	2.4
Radiologic technology	10,174	5,417	53.2	1.1
Mental health technology	15,736	6,749	42.9	1.4
Other nursing	42,648	36,473	85.5	7.6
Dental assistant	21,248	16,079	75.7	3.4
Dental lab technology	4,345	1,552	35.7	.3
Dental hygienist (associate)	6,427	5,896	91.7	1.2

Consumer Homemaking

Among the eight vocational fields, the greatest imbalance of females and males is in the non-wage earning Consumer Homemaking program, as Table VII reports. In this program males are represented most strongly in the consumer education classes by a 30% enrollment. Outside of comprehensive homemaking courses, female program interest, as indicated by the enrollment data, appears stronger in clothing and textiles (89%) and housing/home furnishings (87%) than in "other" (71%) or consumer education (70%) courses.

Home Economics Related Occupations

Most females enrolled in HERO are evenly divided into three course areas revolving around interests in food, clothing and home furnishings. Of all randomly sampled classes in HERO, the institutional and home management services program comes closest to a balanced enrollment of the sexes, with 62% females and 38% males. Male representation is weakest in the clothing management/production/services courses (9%). Table VIII demonstrates the enrollment of females in selected HERO programs.

Table VII
NATIONAL ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE CONSUMER HOMEMAKING FIELD IN 1976
N = 2,688,807 Females

Program	Total no. of students	Total no. of females	% females in program	% females in Consumer Homemaking Field
Family relations	181,517	128,735	80	4.8
Consumer education	155,107	108,184	69.7	4
Comprehensive homemaking	1,629,107	1,203,733	73.9	44.8
Food and nutrition	338,242	254,146	75.1	9.5
Clothing and textiles	340,221	301,924	88.7	11.2
Child development	193,300	160,589	83.1	6
Other	506,183	361,527	71.4	13.5
Housing & home furnishings	130,066	113,637	87.4	4.2

Table VIII
NATIONAL ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE HOME ECONOMICS RELATED OCCUPATIONS FIELD IN 1976
N = 349,932 Females

Program	Total no. of students	Total no. of females	% females in program	% females in HERO Field
Food mgmt./ production/ services	137,284	94,570	68.9	27
Clothing mgmt./ production/ services	105,766	96,577	91.3	27.6
Home furnishings/ equipment/ services	33,198	26,714	80.5	10.7
Institutional and home mgmt. services	12,082	7,474	61.9	2.1
Care/guidance of children	144,208	95,164	66	28

Office and Business

The greatest number of females enrolled in the Office and Business program are taking steno/secretarial courses. The typing/related occupational cluster and the filing/office machines cluster account for the second and third largest program choices of females. Enrollment of females and males comes closest to being balanced in the accounting and computing classes, with 49% males and 51% females, and in the computer programmer courses, with 55% males and 45% females. Of the randomly selected classes examined in this field, females are least represented (34%) in the supervisory/advisory management courses. Table IX offers enrollment figures for females in selected office and business programs.

Table IX
NATIONAL ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE OFFICE AND BUSINESS FIELD IN 1976
N = 1,907,146 Females

Program	Total no. of students	Total no. of females	% females in program	% females in Office and Business Field
Accounting and computing	511,998	261,263	51	13.7
Programmers	43,242	19,344	44.7	1
Supervisory/ advisory management	147,658	50,790	34.4	2.7
Typing/related occupations	656,043	452,605	69	23.7
Filing/office machines	592,608	349,111	59	18.3
Computer and console operations	41,747	24,332	58.3	1.3
Steno/secretary related	699,844	557,983	79.7	29.3

Technical

In the Technical vocational program, females are most frequently enrolled in the "other" courses, as Table X suggests. A greater percentage of females in the technical field are enrolled in the chemical technology curriculum (35%) than are enrolled in the electronics (3%), industrial (7%), architectural (10%), or environmental control (6%) classes.

Table X
NATIONAL ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE TECHNICAL FIELD IN 1976
N = 44,135 Females

Program	Total no. of students	Total no. of females	% females in program	% females in Technical Field
Police science	91,417	8,959	9.8	20.3
Industrial technology	20,829	1,418	6.8	3.2
Chemical technology	5,167	1,794	34.7	4.1
Electronic technology	84,412	2,888	3.4	6.5
Environmental control technology	8,192	477	5.8	1.1
Architectural technology	25,090	2,392	9.5	5.4
Automotive technology	10,725	616	5.7	1.4
Other	62,562	14,252	22.8	32.3
Scientific data technology	18,644	5,500	29.5	12.5

Trade/Industry

Of all females enrolled in the Trade/Industry field, the greatest numbers are enrolled in the cosmetology classes. Females

are also predominant in courses such as personal services and textile production/fabrication. In the auto mechanics, machine shop, welding and electricity classes, males account for at least 96% of the enrollees. Balanced program enrollment is almost achieved in the commercial art courses, where females constitute 45% of the students in this cluster. Table XI offers a summary of the enrollment of females in selected trade and industry vocational courses.

Table XI
NATIONAL ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE TRADE/INDUSTRY FIELD IN 1976
N = 338,389 Females

Program	Total no. of students	Total no. of females	% females in program	% females in Trade/Industry Field
Commercial art	48,699	21,815	44.8	6.5
Auto mechanics	356,534	13,325	3.7	4
Graphic arts	101,035	18,338	18.2	5.4
Other Arts	71,640	3,177	4.4	.9
Drafting	151,434	14,076	9.3	4.2
Cosmetology	74,908	56,984	76.1	16.8
Other public services	66,237	10,198	15.4	3
Foremanship supervisory & management	112,991	15,216	13.5	4.5
Electricity	66,524	1,130	1.7	.3
Machine shop	100,793	2,146	2.1	.6
Welding and cutting	175,937	4,582	2.6	1.4
Other personal services	14,911	11,344	76.1	3
Textile production and fabrication	55,078	37,339	67.8	11
Other	177,898	40,848	23	12.1
Barbering	3,948	769	19.5	.2

Summary of National Enrollment Patterns

In reviewing the national enrollment trend data, several patterns are evident. These patterns include:

(1) Of all students enrolled nationally in vocational programs, the proportion of males to females decreased from 1975 to 1976.

(2) Females continue to be predominant in four occupational programs: Consumer Homemaking, Office and Business, Health, and Home Economics Related Occupations.

(3) Males continue to be predominant in three occupational areas: Trade and Industry, Technical, and Agriculture.

(4) Balanced enrollment of females and males is closest to being achieved in the Distributive Education field with 41% females and 59% males.

(5) Female enrollment continues to decline in five traditional vocational program areas: Consumer Homemaking, Office and Business, Health, Home Economics Related Occupations, and Distributive Education.

(6) Male enrollment continues to increase in two traditionally male-oriented vocational programs. The rate of increase is sharper in the Trade and Industry program than in the Technical program.

(7) Male enrollment continues to decline in one traditionally male vocational field: Agriculture.

(8) Enrollment trend data from the eight national vocational programs suggest a trend toward more balanced enrollment in each field. However, in each field sex segregation continues to persist. The trend toward inequitable balance of the sexes is especially consistent in the Trade and Industry and Technical vocational programs.

Section IV
EVIDENCE OF SEX BIAS AND ROLE STEREOTYPING IN MICHIGAN VOCATIONAL EDUCATION ENROLLMENT

Overview

As was evidenced at the national level, sex segregation appears to exist within the eight occupational fields in Michigan secondary vocational programs. Table XII offers a comparison of the distribution of males and females in Michigan vocational programs for selected years.

Table XII
PERCENTAGE DISTRIBUTION OF MALES AND FEMALES IN MICHIGAN SECONDARY VOCATIONAL PROGRAMS FOR SELECTED YEARS

Cluster	1971		1972		1975		1976		1977	
	M %	F %	M %	F %	M %	F %	M %	F %	M %	F %
Agriculture	93	7	91	9	83	17	80	20	77	23
Distributive Education	66	34	64	36	59	41	60	40	49	51
Health	6	94	9	91	11	89	14	86	12	88
Consumer Homemaking	11	89	14	86	17	83	16	84	18	82
Home Economics Related Occupations	32	68	20	80	27	73	26	74	30	70
Office and Business	21	79	24	76	25	75	24	76	28	72
Technical	97	3	91	9	86	14	86	14	80	20
Trade/Industry	89	11	85	15	82	18	88	12	84	16

As Table XII indicates, females are predominant in Health, Consumer Homemaking, Home Economic Related Occupations and Office/Business. Since 1975, only in the Distributive Education program does the enrollment of males and females approach equity, with 51% females and 49% males.

In comparison to 1972, enrollment figures for 1977 in Michigan vocational programs suggest that gaps in the balanced enrollment of the sexes are narrowing. Since 1972, females have consistently increased their representation in non-traditional fields such as Agriculture, Technical and Trade/Industry. Similarly the proportion of males to females in traditionally female programs has increased in Health, Consumer Homemaking, HERO, and Office/Business. It is significant to note that overall increased enrollment of students in non-traditional vocational programs is greater for females than males.

A closer inspection of the occupational programs with Michigan's eight vocational fields reveals that despite movement toward more balanced enrollment in each field, one or the other sex is often underrepresented, depending upon the nature of the course or class emphasis.

Agriculture

It appears that since 1971 females in the Agricultural program have been moving out of the "other" classes into different areas. This is particularly true in the agricultural production course where the number of females who were concentrated in agricultural production has more than doubled since 1972. In 1972 60.3% of all females in the agricultural field were enrolled in ornamental horticulture and agricultural production. By 1977 the percentage of females in these two classes had risen to 83.5%. Table XIII presents a summary comparison of female enrollment in selected agricultural clusters in 1972, 1975, and 1977.

Table XIII
MICHIGAN VOCATIONAL EDUCATION ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE AGRICULTURE FIELD FOR SELECTED YEARS

Program	1972 N = 1,294		1975 N = 2,687		1977 N = 3,777	
	% of females in program	% of females in field	% of females in program	% of females in field	% of females in program	% of females in field
Ornamental horticulture	25	38.6	37.4	33.9	48	34
Agricultural production	4.2	21.7	13.2	39.2	19.4	49.5
Agricultural resources	10.5	11	24.7	14	29.8	9.7
Agricultural mechanics	1.8	2.7	1.8	1.4	2.4	1.3
Other	36.3	9.7	70.1	2	95.7	1.8

Distributive Education

Of all course offerings in the Distributive Education program, interest appears to have shifted for females away from food services, apparel and accessories, and real estate into general merchandising. Movement toward balanced enrollments in real estate and insurance classes in the last five years is also evident, with females consistently making gains in these two programs. The percentage of females who make up the students in finance/credit courses has also increased steadily. In fact, whereas in 1972 females constituted less than half of the students in finance/credit, "other" and general merchandising classes, the trend has been reversed in 1977. Males now constitute less than half of the enrollees in these three classes. Table XIV presents a summary of the number of females enrolled in selected Distributive Education classes for selected years.

Table XIV
MICHIGAN VOCATIONAL EDUCATION ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE DISTRIBUTIVE EDUCATION FIELD FOR SELECTED YEARS

Program	1972 N = 14,094		1975 N = 16,443		1977 N = 22,399	
	% of females in program	% of females in field	% of females in program	% of females in field	% of females in program	% of females in field
General merchandise	47.5	31.2	47	50.8	54.7	65.9
Real estate	29.3	12.5	38.7	10.5	41.9	10.2
Food services	49.1	9.3	59.4	5	35.4	2
Apparel and accessories	67.1	9.3	75.8	5.5	93.7	1.7
Other	27	6.5	NA	NA	54.8	10.2
Finance and credit	23	2.7	32.2	3.9	57.5	1.6
Insurance	19.3	4	26.6	4.7	31.4	3

Health

There appears to be evidence also of shifts in female interests in the Health field, as Table XV indicates. Whereas in 1972, 71.9% of all females in the health program were enrolled in a nursing program, only 53.7% were enrolled in nursing-related courses in 1977. Female interests appear to have shifted away from nursing into dental programs. Dental assistant, dental lab technology and dental hygienist (associate) programs have all enrolled greater percentages of females since 1972, though the total number of females who choose dental programs still represent approximately only 10% of all females who are enrolled in the vocational Health program.

Males make up over half of the students enrolled in radiologic and inhalation therapy technology programs. Also, males have shown consistently more interest in mental health technology and other radiologic courses since 1972. However, the percentage of males in proportion to the percentage of females entering associate degree nursing programs and nurses' aides programs has decreased slightly since 1972.

Table XV
MICHIGAN VOCATIONAL EDUCATION ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE HEALTH FIELD FOR SELECTED YEARS

Program	1972 N = 13,226		1975 N = 26,269		1977 N = 30,841	
	% of females in program	% of females in field	% of females in program	% of females in field	% of females in program	% of females in field
Nursing (associate degree)	88.5	22.9	91.9	29.3	94.3	25.8
Nursing assistant (aide)	94.5	30.2	94.6	23.2	94.8	18
Practical (vocational) nursing	97.6	18.8	96.7	12.1	95	10
Inhalation therapy technology	50.6	1.2	47.9	1.7	44.7	.8
Medical laboratory technology	83	4.4	100	.07	82.8	.8
Radiologic technology	58.2	1.2	66.2	.9	49.4	.6
Mental Health	87	1.2	63.5	4	61.9	3.4
Dental assistant	97.6	8.3	96.3	4.3	97.2	5
Dental lab technology	32.7	1	44.8	1	79	1.6
Dental Hygienist (associate)	85.5	1.9	99	1.5	97.4	2.6
Other radiologic	NA	NA	80	.02	70.9	.2

Consumer Homemaking

Between 1972 and 1977 males have shown interest in all consumer homemaking programs with the exception of family relations and "other" courses, as Table XVI demonstrates. However, females continue to be predominant in all classes within the non-wage earning Consumer Homemaking field. This is especially true in clothing/textiles, child development and housing and home furnishings classes where females have, since 1972, made up more than 90% of the students enrolled in these three courses.

Table XVI
MICHIGAN VOCATIONAL EDUCATION ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE CONSUMER HOMEMAKING FIELD FOR SELECTED YEARS

Program	1972 N = 64,496		1975 N = 74,913		1977 N = 75,505	
	% of females in program	% of females in field	% of females in program	% of females in field	% of females in program	% of females in field
Family relations	70.2	18.8	69.6	17.2	75.1	14.5
Consumer education	71	5.5	66.4	6.8	63.5	7.5
Comprehensive homemaking	94.8	24.1	86.3	11	81.7	13
Food and nutrition	80.2	5.2	75.4	11.8	71.9	15.4
Clothing and textiles	99.7	8.3	97.8	15.6	94.5	15.4
Child development	95.8	18	95.5	20	93.3	20
Other	59	1.3	81.8	4	90.8	2.4
Housing and home furnishings	93.5	11	93.5	10.1	91.4	9.4

Home Economics Related Occupations

Since 1972 the distribution of males and females in HERO courses has been somewhat erratic. Interests appear to have shifted unsystematically. For example, in 1975 males made up a greater portion of students enrolled in food management/production/services, institutional and home management services, and the care/guidance of children than they did in 1977. Thus males appear to have reflected less interest in these three courses in the last few years. It is significant to note, also, that female interest in HERO classes shifted in 1975. In 1972 more than half of all females enrolled in the HERO field were taking either food or clothing management/production/services. Between 1972 and 1975, however, female interests in clothing classes decreased considerably, from 40% to 15.8%. During this same period female interests increased in the care/guidance of children from 11.6% in 1972 to 39.4%. This trend persists in 1977, with 49.1% of all females in the HERO program taking food management/production/services and 38.6% taking courses in the care/guidance of children. Table XVII presents selected enrollments in the Home Economics Related Occupations field.

Table XVII
MICHIGAN VOCATIONAL EDUCATION ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE HOME ECONOMICS RELATED OCCUPATIONS FIELD FOR SELECTED YEARS

Program	1972 N = 10,815		1975 N = 9,307		1977 N = 9,274	
	% of females in program	% of females in field	% of females in program	% of females in field	% of females in program	% of females in field
Food management/ production/services	63.5	33.8	55.8	38	57.1	49.1
Clothing management/ production/services	93	40	85.6	15.8	82.5	8.5
Home furnishings/ equipment/ services	86.7	6.2	89.9	5.6	88.7	2
Institutional and home management services	95.5	1.6	73	1.2	87.3	1.6
Care/guidance of children	96	11.6	90.9	39.4	93.4	38.6

Office and Business

In the Office and Business vocational field a fairly equal distribution of the sexes had been achieved in 1977 in the accounting/computing and programmers classes. However, since 1972, males have continually been underrepresented in the typing and related courses, and the steno/secretarial programs. In 1977 they constituted less than 12% of the students in each of these two curriculum areas. Between 1972 and 1977 males have shown only a 2% enrollment gain in steno/secretarial courses. At the same time females have shown consistently increasing interest in the supervisory/advisory management program. However, females in 1977 made up only one-third of the students in this course. Among all females in the Office and Business vocational field, more interest seems to have directed in 1977 toward accounting and computer related classes and away from filing/office machines than has been demonstrated in earlier years. Yet since 1972 female interest in Office and Business classes continues to reflect interest in typing and secretarial courses, as Table XVIII indicates.

Table XVIII
MICHIGAN VOCATIONAL EDUCATION ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE OFFICE AND BUSINESS FIELD FOR SELECTED YEARS

Program	1972 N = 49,526		1975 N = 47,709		1977 N = 58,842	
	% of females in program	% of females in field	% of females in program	% of females in field	% of females in program	% of females in field
Accounting/computing	52.8	9.2	54	14.3	56.3	17.4
Programmers	NA	NA	56.7	1.9	55	1.3
Supervisory/administrative management	30.9	2.4	38.5	5	38.8	7.5
Typing/related occupations	89	30.5	85	25.5	89.5	26.8
Filing/office machines	86.5	16.2	92.5	9.3	76.2	4.4
Computer and console operators	NA	NA	56.7	1.9	61	3.6
Steno/secretarial related	97.3	28.8	97.1	35.9	95.7	35.3

Technical

Significant though erratic variations in the proportion of female to male students are reported in some technical classes, such as chemical technology and environmental control technology. Female gains in architectural technology courses have been consistent since 1972. The only cluster wherein the proportion of female to male students has increased at a very slow rate from 1972 to 1977 is industrial technology, where females are reported to have increased their representation by only .8%. Equal proportions of males and females in technical classes in 1977 is evident only in the chemical technology classes and "other" courses. With the exception of "other" programs, female interest has, and continues to be, centered on the police science program. In all other technical classes the student ratio of male to female exceeds five to one, as Table XIX demonstrates.

Table XIX
MICHIGAN VOCATIONAL EDUCATION ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE TECHNICAL FIELD FOR SELECTED YEARS

Program	1972 N = 1,510		1975 N = 2,977		1977 N = 4,981	
	% of females in program	% of females in field	% of females in program	% of females in field	% of females in program	% of females in field
Police science	7.3	10.1	16.2	16.3	19.5	14.5
Industrial technology	7	8.7	7.5	4.8	7.8	2.4
Chemical technology	22.2	2.7	15.4	.2	49.1	1.1
Electronic technology	.8	.3	2.4	1.5	3	1.8
Environmental control technology	3.2	2.4	1.6	.8	15	3.4
Architectural technology	3.5	15.2	9.4	3.2	12.2	2.9
Automotive technology	.6	.4	1.5	.8	4.9	2.2
Scientific data technology	23.7	6.4	33.8	9	5.4	.04
Other	1.5	.3	53.5	56.2	46	66.8

Trade and Industry

Significant gains in the proportion of females enrolled in trade and industry classes are reported for other personal services, law enforcement training and bus driver training classes (other automotive). Minimal gains are reported in electricity, machine shop and auto mechanics where, in each program, females constitute less than 4% of the students enrolled. Strongest female interests are indicated in the cosmetology program. Of all females enrolled in the Trade and Industry curriculum, one-fifth take cosmetology classes, as Table XX indicates.

Table XX
MICHIGAN VOCATIONAL EDUCATION ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE TRADE AND INDUSTRY FIELD FOR SELECTED YEARS

Program	1972 N = 13,984		1975 N = 20,202		1977 N = 16,923	
	% of females in program	% of females in field	% of females in program	% of females in field	% of females in program	% of females in field
Commercial art	53.5	4.3	55.6	2.2	60.2	10.7
Auto mechanics	2.7	2	4.1	2.8	3.8	3.7
Graphic arts	19.8	4.3	25.6	4.4	27.8	5.7
Other automotive	1.8	.1	3.3	1	56.3	31.2
Drafting	1.9	.6	5.7	1	8.8	1.8
Cosmetology	94.8	6.3	98.8	12.4	97.6	20.4
Other public services	51.3	44.6	32.4	9	52.2	1.2
Foremanship/supervisor/ management	20.4	18.4	21.9	4.3	19	4.3
Electricity	4	.06	1.2	.2	1.2	.1
Machine shop	NA	NA	9	.2	.8	.3
Welding and cutting	NA	NA	1.7	.5	.8	.4
Other personal services	59.6	2.1	47.3	27	96.6	2
Textile production and fabrication	92.1	1.2	41.5	.6	85.5	.3
Other	21	4.5	31.3	20.2	11	.9
Law enforcement training	10.2	1.9	21.3	5	26.1	8.7

Summary of Shifts in Vocational Course Selection and Interest of Michigan Vocational Students

In summary, there are vocational interest patterns among females and males within each of the eight vocational programs that are reflected in the vocational enrollment data in Michigan. In Michigan since 1972 these interest patterns are common:

(1) Agriculture: Females have been moving out of "other" programs into ornamental horticulture and agricultural production courses.

(2) Distributive Education: Female interests appear to be shifting into real estate, insurance, general merchandising and finance/credit classes. Whereas in 1972 females made up less than half of the students in finance/credit, "other" and general merchandising courses, males now constitute less than half of the enrollees in these three curricula.

(3) Health: Female interests have shifted out of nursing into dental classes. Male interests appear to have moved also away from nursing into specialized health fields such as radiology, inhalation therapy, and mental health.

(4) Consumer Homemaking: Male interests have increased in all consumer homemaking classes with the exception of family relations and other courses. However, the proportion of males to females in all consumer homemaking programs indicates that female interests in this occupational field still remains stronger than male interest.

(5) Home Economics Related Occupations: Erratic interest patterns are demonstrated for males. In 1975 male interest was greater in food, and in institutional and home management services, and in care/guidance of children than in 1977. Female interest trends remain consistent, with over three-fourths of female students in the HERO program choosing either food management or care/guidance of children classes.

(6) Office and Business: Male interests have increased slightly in steno/secretarial courses. Female interests have shifted from filing/office machines into accounting and computer-related classes. As a result a fairly equal distribution of males and females in the accounting, computing and programmers courses had been demonstrated in 1977.

(7) Technical: Females consistently demonstrate interest in "other" and automotive technical courses. Among all females in the Technical field, interest in specialized courses such as chemical, environmental control, and scientific data technology has been erratic. Decreases in the percent of all females in the technical field who are enrolled in architectural and electronic technology classes were reported.

(8) Trade and Industry: Since 1972 among all females in the Trade and Industry field, female interests are reported to be consistently stronger in bus driver training, drafting, cosmetology, law enforcement training and graphic arts courses. Interest in other public service, foremanship/supervisor/management, and textile production and fabrication courses among females has decreased.

Section V
EVIDENCE OF SEX BIAS AND ROLE STEREOTYPING IN NATIONAL AND STATE VOCATIONAL EDUCATION PROGRAMS

Overview

Patterns in enrollment at the national level provide a basis for a comparison of the effect of sex role stereotyping and sex bias as evidenced in Michigan vocational enrollment data. Table XXI presents a comparison of Michigan vocational enrollment data and national vocational enrollment statistics for 1976.

Table XXI suggests that in certain occupational clusters the percentages of males and females enrolled in Michigan vocational education programs in which they have not traditionally participated are greater than those figures generated by the national enrollment reports. For example, the percentages of females in Agriculture, Technical, and Trade and Industry programs in Michigan exceeds the national average. Michigan enrollment patterns in the Distributive Education and HERO programs are quite similar to the national pattern. However, the percentage of males enrolled in Health, Consumer Homemaking, and Office/Business falls below the national average. Thus it appears that in Michigan females are enrolling in some non-traditional programs and paradoxically retaining a higher than national average representation in traditional occupational fields, whereas an opposite trend is evident for males enrolled in non-traditional career programs.

Table XXI
DISTRIBUTION OF MALES AND FEMALES IN VOCATIONAL EDUCATION AT THE NATIONAL AND STATE LEVEL IN 1976*

Cluster	National Female %	State Female %	National Male %	State Male %
Agriculture	10	20	90	80
Distributive Ed.	41	40	59	60
Health	70	86	30	14
Consumer Homemaking	76.5	84	23.5	16
HERO	74	74	26	26
Office/Business	61	76	39	24
Technical	9	14	91	86
Trade/Industry	11	12	89	88

*Percents have been rounded

A Selected Sample of States' Enrollment Trends

Table XXII compares the 1976 distribution of females and males in vocational education programs in Michigan with vocational enrollment data from four states with comparable populations: New Jersey, Pennsylvania, Florida and Ohio.

A close inspection of Table XXII suggests that in comparison to Ohio, Pennsylvania and Florida, males in Michigan have made greater enrollment gains in two traditionally female vocational fields: Home Economics Related Occupations and Office/Business. Also, the data demonstrate that females have made greater gains in Michigan in the traditionally male-dominated Agricultural field than those gains reported for students in these three states.

In Michigan, percentage gains made by males in the Health fields, and the increase of females in the Technical, and Trade and Industry programs are similar to those gains in New Jersey, Pennsylvania and Florida. However, the percentage of males enrolled in a Consumer Homemaking program in Michigan is not as large as those percentages reported by other states.

Table XXII

DISTRIBUTION OF FEMALES AND MALES IN VOCATIONAL EDUCATION IN FIVE STATES IN 1976

Program	New Jersey		Michigan		Pennsylvania		Ohio		Florida	
	F %	M %	F %	M %	F %	M %	F %	M %	F %	M %
Agriculture	26.7	73.3	20.1	79.9	20	80	18.5	81.5	16.7	83.3
Distributive Ed.	59	41	40.0	59.6	59	41	48.1	51.9	53.2	46.8
Consumer Homemaking	79.3	20.7	84	16	82.3	17.7	84.1	15.9	83.2	16.8
Health	86.9	13.1	86.4	13.6	89.7	10.3	52.7	47.3	77	23
HERO	73.3	26.7	74.1	25.9	76.2	23.8	85.1	14.9	83.9	16.1
Office/Business	66.1	33.9	76.3	23.7	84.9	15.1	76.7	23.3	79.3	20.7
Technical	16.5	83.5	14.4	85.6	18.1	81.9	8.2	91.8	12.7	87.3
Trade/Industry	11.2	88.8	12.4	87.6	19.8	80.2	11.8	88.2	16.9	83.1

Increased Enrollment Gains of Non-Traditional Vocational Students in Michigan

Increases in non-traditional vocational student enrollment from 1971 to 1977 have been reported in Michigan. Gains were sharpest in the Agricultural, Distributive Education and Technical programs. Since 1971 the percentage of females enrolled in agricultural programs has increased 16%. In Distributive Education and Technical fields, females have shown a 17% increase since 1971.

Gains in the enrollment of males in non-traditional programs have been slower. Since 1971 males have shown a 6% enrollment increase in Health, a 7% increase in Consumer Homemaking, and a 7% increase in Office/Business. The percentage of males enrolled in HERO programs has decreased by 2% since 1971. Thus it appears that the HERO occupational field does not reflect a tendency toward increased enrollment of non-traditional students. Enrollment in the HERO programs has fluctuated since 1971, with decreases of percentages of male students reported every other year. It is important to note that the trend toward increased enrollment of non-traditional students remained constant at the end of 1977 in Agriculture, Distributive Education, Consumer Homemaking, Office/Business, Technical, and Trade and Industry fields. However, at the end of 1977, male enrollment in Health programs was beginning to decline. Also, at the end of 1977, a balanced enrollment was achieved in the Distributive Education field with 51% female and 49% male representation.

National and State Comparisons of Vocational Enrollment Patterns

As was evidenced at the national level, imbalanced representation of the sexes is evident in the secondary vocational programs in Michigan.

Agriculture

The distribution of females within Michigan vocational agricultural programs closely resembles national trends. Over three-fourths of the Michigan females in the Agricultural field are enrolled in ornamental horticulture and agricultural production. In comparison to national statistics, however, a significantly greater percentage of all females in Michigan's agricultural field (7.8%) are enrolled in agricultural resources classes, as Table XXIII suggests.

Table XXIII

MICHIGAN AND NATIONAL VOCATIONAL EDUCATION ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE AGRICULTURE FIELD IN 1976

Program	National N = 109,951		Michigan N = 3,092	
	% of female program enrollment	% of female field enrollment	% of female program enrollment	% of female field enrollment
Ornamental horticulture	32.6	34.5	42.8	34.5
Agricultural production	7.7	40.5	16.7	44.3
Agricultural resources	12.8	3.3	22.2	11.1
Agricultural mechanics	2.7	3.7	4.8	3.2
Other	11.4	13	34.8	2.8

Distributive Education

The percentage of Michigan females enrolled in a Distributive Education program who choose the general merchandising curriculum exceeds the national average by 28%, as Table XXIV indicates. Of those students enrolled in real estate, apparel and accessories, and insurance classes, there is stronger female representation in Michigan than is reflected by the national average. Of those students enrolled in food services, "other", and finance/credit classes, there is less female representation than is reported at the national level.

Table XXIV

MICHIGAN AND NATIONAL VOCATIONAL EDUCATION ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE DISTRIBUTIVE EDUCATION FIELD IN 1976

Program	National N = 366,705		Michigan N = 17,528	
	% of female program enrollment	% of female field enrollment	% of female program enrollment	% of female field enrollment
General merchandising	44.2	40	51.7	68
Real estate	25.8	9.3	37.7	8.8
Food services	57	7.4	53.2	2.5
Apparel and accessories	71.2	5	90.8	.9
Other	42.5	14.3	31.1	5.9
Finance and credit	46.3	7	19.9	3.9
Insurance	30.5	1.2	32.2	1

Health

The percentage of Michigan females enrolled in nursing programs is greater than the national average. The data suggest that, of all females enrolled in the Health field, a greater percentage of Michigan females (56.8%) are enrolled in nursing programs than females who are enrolled in nursing programs at the national level (53.7%). Thus at the national level greater gains have been made for male enrollment in nursing programs than have been evidenced in the state. Also, the percentage of females in Michigan who choose to enroll in health technology and dental assistant programs is greater than the national average. Of all students in Michigan in the medical lab assisting course, it is interesting to note that there are 26% more females than males in Michigan than the national proportion of the sexes in this class. Table XXV presents a comparison of state and national enrollment in selected Health classes in 1976.

Table XXV
MICHIGAN AND NATIONAL VOCATIONAL EDUCATION OF FEMALES IN SELECTED PROGRAMS IN THE HEALTH FIELD IN 1976

Program	National N = 476,802		Michigan N = 25,083	
	% of female program enrollment	% of female field enrollment	% of female program enrollment	% of female field enrollment
Nursing (associate degree)	82.6	18.2	93.2	20.7
Nursing assistant (aide)	72.3	17.7	93.4	23.1
Practical (vocational) nursing	86.2	17.8	95.5	13
Inhalation therapy technician	46.7	9	60	1.2
Medical lab assisting	71	2.4	95.7	4
Radiologic technology	53.2	1.1	66.6	.8
Mental health technology	42.9	1.4	60	4.2
Dental assistant	75.7	3.4	95.8	4.3
Dental lab technician	35.7	.3	41.3	.1
Dental hygienist	91.7	1.2	100	1.2
Other radiologic	77	.9	77	16.1

Consumer Homemaking

National and state trends regarding the enrollment of males and females in the non-wage earning Consumer Homemaking field are similar. Both nationally and in the state, females are predominant in all programs within this vocational program. In comparison to national data, the percentage of Michigan males enrolled in family relations, consumer education, and food and nutrition is greater. However, the percentage of Michigan males enrolled in comprehensive homemaking, clothing and textiles, and child development is less than the national average. It is significant to note that the distribution of Michigan females in all courses in the Consumer Homemaking program is broader than the national distribution. Whereas 44.8% of the females in the nation are enrolled in comprehensive homemaking, only 14.3% of Michigan females are taking these classes. Table XXVI compares the enrollments of students in the nation and in Michigan in selected Consumer Homemaking classes in 1976.

Table XXVI
MICHIGAN AND NATIONAL VOCATIONAL EDUCATION ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE CONSUMER HOMEMAKING FIELD IN 1976

Program	National N = 2,688,807		Michigan N = 67,771	
	% of female program enrollment	% of female field enrollment	% of female program enrollment	% of female field enrollment
Family relations	80	4.8	75.2	14.8
Consumer education	69.7	4	61.1	7
Comprehensive homemaking	73.9	44.8	84.3	9.9
Food and nutrition	75.1	9.5	72.9	14.3
Clothing and textile	88.7	11.2	96.8	16.7
Child development	83.1	6	97.4	22
Other	71.4	13.5	95.6	2.5
Housing and home furnishings	87.4	4.2	93.8	10

Home Economics Related Occupations

Females are predominant in all courses within the Home Economics Related Occupations program at both the state and national levels, as Table XXVII demonstrates. At the national level, the distribution of female enrollment is divided primarily in the clothing, food, and child guidance areas. In Michigan, the distribution of females is reflected evenly among two major areas: care/guidance of children classes and food management/production/services courses.

Table XXVII
MICHIGAN AND NATIONAL VOCATIONAL EDUCATION ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE HOME ECONOMICS RELATED OCCUPATIONS FIELD IN 1976

Program	National N = 349,932		Michigan N = 9,336	
	% of female program enrollment	% of female field enrollment	% of female program enrollment	% of female field enrollment
Food management/production/services	68.9	27	59.2	43
Clothing management/production/services	91.3	27.6	82.1	12
Home furnishings/equipment/services	80.5	10.7	83.9	1.3
Institutional and home management services	61.9	2.1	84.2	9
Care/guidance of children	66	28	94.9	43

Office and Business

In the state and in the nation, females are predominant in all Office and Business curricula except supervisory/advisory management, where females account for 34% of the enrollees at both levels. Similarly, in the nation and in Michigan, over half of the females in the Office and Business field are enrolled in either secretarial and/or typing courses. The percentage of Michigan females enrolled in steno/secretarial related classes (35.7%) and

in typing/related classes (32.3%) is greater than the national average, (29.3% and 23.7% respectively). Thus males in Michigan have made fewer gains in the traditionally female Office/Business program in comparison to the gains reported in the nation. Table XXVIII presents a comparison of females enrolled in selected Office and Business classes at both levels in 1976.

Table XXVIII

MICHIGAN AND NATIONAL VOCATIONAL EDUCATION ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE OFFICE AND BUSINESS FIELD IN 1976

Program	National N = 1,907,146 % of female program enrollment	National N = 1,907,146 % of female field enrollment	Michigan N = 53,404 % of female program enrollment	Michigan N = 53,404 % of female field enrollment
Accounting and computing	51	13.7	60.1	14.6
Programmers	44.7	1	61.5	.5
Supervisory/advisory management	34.4	2.7	34.2	3.8
Typing/related occupations	69	23.7	88.3	32.3
Filing/office machines	59	18.3	91.3	4.4
Computer and console operations	58.3	1.3	58.3	7.3
Steno/secretary related	79.7	29.3	93.1	35.7

Technical

At both state and national levels, with the exception of "other" classes, females make up no more than one-fifth of the enrollees in any Technical course, as Table XXIX suggests. Of all courses in this field, the police science program has strong female participation at the national (20.3%) and state (20.5%) levels. Females are more strongly represented in the scientific data technology classes in Michigan (20.2%) than at the national level (12.5%). Similarly, a greater percentage of females are enrolled in "other" technical courses (37.8%) than is evidenced at the national level (32.3%). However, gains for females in the chemical, electronic, industrial and architectural programs appear to be smaller in Michigan than those reported nationally.

Table XXIX

MICHIGAN AND NATIONAL VOCATIONAL EDUCATION ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE TECHNICAL FIELD IN 1976

Program	National N = 44,135 % of female program enrollment	National N = 44,135 % of female field enrollment	Michigan N = 3,554 % of female program enrollment	Michigan N = 3,554 % of female field enrollment
Police science	9.8	20.3	17	20.5
Industrial technology	6.8	3.2	5.1	1.4
Chemical technology	34.7	4.1	20.6	.6
Electronic technology	3.4	6.5	4.1	3.8
Environmental control technology	5.8	1.1	12.4	4.1
Architectural technology	9.5	5.4	8.3	2.6
Automotive technology	5.7	1.4	4.5	2.3
Scientific data technology	29.5	12.5	39.6	20.2
Other	22.8	32.3	40.7	37.8

Trade and Industry

Of all Michigan females enrolled in the Trade and Industry field, more than half are enrolled in cosmetology, graphic arts, and other public or personal services classes. This pattern is also evidenced nationally, as Table XXX suggests. Among all courses in the Trade and Industry vocational program, cosmetology enrolls a larger percentage of females than does any other course in the field. In Michigan, for example, 96.9% of the cosmetology students are female, in comparison to the national average of 76.1%. At the national level, female representation in the drafting classes is stronger (4.2%) than in Michigan (2%). However, females in the state have made greater enrollment gains in auto mechanics than have been reflected nationwide. Within the selected trade and industrial programs that prepare students for apprenticeship, such as machine shop, welding and cutting, and electricity, females are severely underrepresented in proportion to males. In each of these three areas, the percentage of females enrolled in Michigan does not exceed 2%.

Table XXX

MICHIGAN AND NATIONAL VOCATIONAL EDUCATION ENROLLMENT OF FEMALES IN SELECTED PROGRAMS IN THE TRADE AND INDUSTRY FIELD IN 1976

Program	National N = 338,389 % of female program enrollment	National N = 338,389 % of female field enrollment	Michigan N = 12,351 % of female program enrollment	Michigan N = 12,351 % of female field enrollment
Commercial art	44.8	6.5	51.1	6.9
Auto mechanics	3.7	4	5	7
Graphic arts	18.2	5.4	29.6	11
Other Auto	4.4	.9	4.2	.07
Drafting	9.3	4.2	6.8	2
Cosmetology	76.1	16.8	96.9	24.2
Other public services	15.4	3	50	20.5
Foremanship, supervisory and management	13.5	4.5	20	4.1
Electricity	1.7	.3	2	.3
Machine shop	2.1	.6	1.1	.6
Welding and cutting	2.6	1.4	2.6	1.6
Other personal services	76.1	3	57.1	.03
Other	23	12.1	36.3	1
Textile production and fabrication	67.8	11	22.7	.1

Summary of National and State Vocational Enrollment Patterns

In summary, there are several vocational enrollment patterns evidenced nationally in 1976 that are reflected in the Michigan enrollment data for the same year. At both state and national levels these patterns are common:

(1) Agriculture: Over three-fourths of the females in this occupational field are enrolled in ornamental horticulture or agricultural production.

(2) Distributive Education: Balanced enrollment is closest to being achieved in this vocational field. The balance is closer to being reached in Michigan where 51% females and 49% males have chosen to enter this vocational program, in comparison to the national pattern where 41% females and 59% males are enrolled in the Distributive Education program.

(3) Health: Over 55% of all females in the Health program are enrolled in nursing-related classes. At the national level greater percentage gains have been made in male enrollment in most health programs than have been evidenced in Michigan.

(4) Consumer Homemaking: Females are predominant in all courses within the Consumer Homemaking field. Of those vocational fields traditionally considered female, more females elect to enroll in non-wage earning Consumer Homemaking programs than in Health, Office and Business, or HERO fields.

(5) Home Economics Related Occupations: Females also are predominant in all classes within the wage earning HERO programs. However, female enrollment in Michigan HERO courses does not follow similar national distribution patterns. Females in Michigan choose food management or child guidance courses more often than is reported nationwide.

(6) Office and Business: Females are predominant in all classes except supervisory/management courses. However, it appears as if females, at both national and state levels, are moving toward more specialized programs or management courses in the Office and Business program.

(7) Technical: Females constitute one-fifth or less of the enrollees in many technical classes. Fewer female enrollments are reported in specialized technical courses such as industrial, architectural, electronic and automotive technology than in "other" technology classes.

(8) Trade and Industry: Of all females in this program, the most common interest centers on the cosmetology courses. The proportion of females to males enrolled in other public service, graphic arts and cosmetology classes is significantly greater in Michigan than at the national level.

Section VI
FROM SCHOOL TO WORK: THE EFFECTS OF SEX ROLE STEREOTYPING AS EVIDENCED IN THE NATIONAL JOB MARKET

Overview

In the national job market the greatest numbers of women are clustered in clerical, in service, or in professional-technical categories. In each of these categories the percentage of women entering these fields has risen since 1970. Females are least represented as farm laborers, non-farm laborers and craft workers. The heaviest distribution of males is in the craft, operative, and professional-technical categories.

An assessment of the national labor force also reveals that women are concentrated in fewer occupational categories than men.

The National Labor Market

While three-fifths of the women in the labor market are white collar workers, half of this number are clerks. The remaining two-fifths of female workers are almost evenly divided between white and blue collar occupations, with 17.9% of females in service-related employment. As Table XXXI indicates, women are clustered in the lowest paying jobs which require the fewest skills and which traditionally have offered the fewest opportunities for advancement.[41]

Table XXXI
DISTRIBUTION OF MALES AND FEMALES IN THE LABOR MARKET BY OCCUPATIONAL CATEGORIES IN 1970 AND 1976

Category by Occupation	1970 Men %	1970 Women %	1976 Men %	1976 Women %
Professional-Technical	14.4	15.7	13.9	15.9
Managerial-Administrative	11.2	3.6	13.4	5.5
Sales	6.9	7.4	5.8	6.7
Clerical	7.6	34.9	5.9	35.3
Craft	21.2	1.8	19.1	1.5
Operative, Ex. Transport	13.6	13.9	16.6	11.9
Transport	5.9	0.5	5.6	–
Non-Farm Laborers	6.6	1.0	7.0	1.2
Farm Laborers	4.5	0.8	4.4	1.3
Service, Ex. Private Household	8.1	16.7	8.5	17.9
Private Household	–	3.8	–	3.1

The Labor Market in Michigan

Table XXXII demonstrates a similar clustering of adult workers in various occupational areas in the Michigan labor force.[42]

Table XXXII
1975 OCCUPATIONS OF EMPLOYED PERSONS 16+ IN MICHIGAN, BY RACE AND SEX
(Vertical Percentage Distributions)

	Female White	Female Nonwhite	Male White	Male Nonwhite
TOTAL	100.0%	100.0%	100.0%	100.0%
White-Collar	63.7	55.6	41.0	23.0
Professional & Technical	16.0	17.3	14.8	10.2
Teachers, except College	6.8	6.2	2.0	1.6
All Other	9.2	11.2	12.8	8.6
Managerial	4.9	2.7	13.0	4.9
Sales	7.7	3.6	6.7	1.8
Clerical	35.1	32.0	6.5	6.1
Blue-Collar	12.3	11.6	47.4	61.3
Crafts	1.4	1.2	21.8	15.4
Carpenters	0.0	0.0	1.9	0.2
All Other	1.4	1.2	19.9	15.2
Nontransport Operatives	8.9	9.9	15.2	31.8
Transport Operatives	0.8	0.3	5.4	5.9
Nonfarm Labor	1.0	0.3	5.1	8.1
Service	22.8	32.6	8.2	15.7
Private Household	3.1	6.5	0.1	0.0
Protective	.02	0.5	2.1	2.5
All Other	19.6	25.7	6.0	13.2
Farm	1.2	0.1	3.5	0.0

Source: 1975 Current Population Survey for Michigan

As Table XXXII points out, most female workers in Michigan are white collar workers, with the largest percentage (35%) in the clerical field. The pattern in Michigan is similar to the national distribution of workers in the job market in that over half of the females are clerical workers or in service-related jobs.

41. *Women Workers Today*, U.S. Department of Labor, 1977.

42. *Women in Michigan's Labor Force*., Detroit Labor Market Analysis Unit, Michigan Employment Security Commission, 1978.

Earnings

The concentration of women in low-wage occupational categories is a primary determinant of average annual earnings in the occupational category in which a worker is placed. For example, services occupations generally pay lower earnings than professional or technical jobs. Table XXXIII presents a comparison of the annual median wage earnings nationally for minority and non-minority males and females in 1965 and 1975.[43]

Table XXXIII
ANNUAL AVERAGE EARNINGS OF FULLY EMPLOYED MINORITY AND NON-MINORITY WORKERS IN THE UNITED STATES IN 1965 AND 1975

Sex/Race of Worker	1965	1975	% Increase
Non-Minority Male	$6,704	$13,216	49.27
Minority Male	$4,277	$10,168	57.93
Non-Minority Female	$3,991	$7,614	47.58
Minority Female	$2,816	$7,505	62.47

As Table XXXIII demonstrates, fully employed women on the average earn approximately three-fifths of the wages of fully employed male workers. It is significant to note, that in Table XXXIII, the earnings gap between minority and non-minority males and between minority males and non-minority females has widened since 1965. The only indication of a narrowing gap in wage earnings is reported between minority and non-minority females where there is less than $150 difference in the annual wage earnings. However, females, regardless of their ethnicity, earn less than males.

Since the mid 1950's, the ratio of earnings between men and women has hovered around 60%, according to the Bureau of Labor Statistics. Signs of improved earnings for women were evident from 1973 to 1976, when the ratio rose from 56.6% to 60.2%. "However, the preliminary data for 1977 show a drop for women with the ratio sliding back to 58.9%, approximately what it had been in 1975." Bureau researchers attributed the decline in average female earnings to the failure of women in higher paying occupations (where gains have been made) to offset the effects of increasing numbers of women moving into traditionally low paying clerical and service jobs.[44]

There are many reasons for this earning gap. Men on the average have had more years of work experience than women. Also, women on the average work fewer overtime hours than men, even on full-time schedules. However, the concentration of females in low-wage occupations and industries is a primary factor contributing to earnings potential. The Department of Labor notes that even after adjusting for such factors as education, work experience and occupational clustering, the earnings differences among men and women remain.

Male and Female Earnings in Similar Occupational Fields

Table XXXIV clearly points out another pattern of sex bias which can be identified in the job market: wage differential among males and females in similar occupational fields.[45]

An examination of Table XXXIV reveals that differences exist in the annual earning levels that are reported for the sexes in similar occupational fields. As managerial-administrative workers, craft workers, operatives and service workers, women earn approximately half of what men in the same occupational category take home. The discrepancy in earnings is greatest in sales, where women earn slightly more than one-third of what men earn. The least discrepancy in annual earnings is reported in the professional-technical area, though females receive, on the average, 64% of what males earn.

Table XXXIV
MEDIAN ANNUAL EARNINGS OF YEAR-ROUND FULL TIME WORKERS BY OCCUPATION IN 1973

Occupational Field	Female	Male	% Female of Male Earnings
All Occupations	$6,340.00	$11,122.00	57%
Professional & Technical	$9,090.00	$14,203.00	64%
Managers and Administrators, except farm	$7,670.00	$14,471.00	53%
Sales Workers	$4,650.00	$12,236.00	38%
Clerical Workers	$6,470.00	$10,606.00	61%
Craft Workers	$6,140.00	$11,163.00	55%
Operatives, including transport equipment	$5,360.00	$ 9,571.00	56%
Nonfarm Laborers	$4,960.00	$ 8,130.00	61%
Service Workers, except Private Household	$4,590.00	$7,913.00	58%

Immediate Earnings of Vocational Education Graduates

Table XXXV demonstrates the immediacy with which sex role stereotyping affects the earnings of female graduates of Michigan vocational schools.[46] Discrepancies in the average wage earnings of men and women are evident once the transition from school to the labor market is made.

Table XXXV
WAGES REPORTED BY MICHIGAN VOCATIONAL EDUCATION GRADUATES OF 1977

Occupational Field	Average Hourly Earnings Female	Average Hourly Earnings Male	Difference M	Difference F
Agriculture	$3.00	$3.80	$+ .80	$- .80
Distributive Education	3.07	4.01	+ .94	- .94
Health	3.19	4.08	+ .89	- .89
Home Economics Related Occupations	2.99	3.71	+ .72	- .72
Office and Business	3.38	3.93	+ .55	- .55
Trade and Industry	3.24	4.36	+1.12	-1.12

Males and females are required to attain the same minimum competencies to graduate from identical vocational programs. However, Table XXXV indicates there is a discrepancy between the earnings paid to young men and women. Females who had recently graduated from a secondary vocational program earned from $.55 to $1.12 less per hour than males in the same occupational category. It is significant to note that even males in traditionally female-oriented vocational programs, such as health, home economics and office and business, reported higher hourly wages than female workers. It is also important to point out that

43. *Women Workers Today*, U.S. Department of Labor, 1977.

44. *Wage Experiences and Earnings*, 1977, Department of Labor, Bureau of Statistics.

45. Women's Bureau, U.S. Department of Labor, from data published by the Bureau of the Census, U.S. Department of Commerce.

46. Memorandum to Vocational Technical Education Service staff, Michigan Department of Education, from Cecelia Lovette, August 28, 1978.

the lowest hourly rate reported was for females in home economics, and that the highest hourly wage was reported by males in the trade and industrial occupations. Such discrepancies reported by Michigan vocational graduates confirm the national patterns of earning differentials among males and females. More importantly, the data demonstrate that sex bias has an immediate impact on the lives of young women who enter the labor force following high school graduation. Sex bias and role socialization contribute to the placement and selection of traditional career opportunities among women. Vocational preparation for traditional occupations provides young females with an immediate economic disadvantage, as the data regarding earnings indicate.

Placement and selection of non-traditional vocational courses appears to increase the potential of young women for higher income advancement in comparison to the wage earnings and job advancement opportunities presented in the female dominated occupations. While the data demonstrate that non-traditional vocational choices will not guarantee equal wage earnings following graduation, the potential to earn more and advance more rapidly is available more in male-oriented occupations than in female-oriented jobs.

Women in Apprenticeship Programs at the National and State Levels

Yet another impact of channeling women into traditional vocational categories on the basis of sex is that women are deprived of the opportunity, challenges, and experiences which are critical prerequisites for entrance into apprenticeship programs. As Table XXXVI illustrates, women and minorities make up only a minute proportion of the apprentices in Michigan.[47]

Table XXXVI
APPRENTICES AND POPULATION IN MICHIGAN IN 1976

Minority Group	% in Michigan	% of Michigan Population
Black	11.1	11.2
Native American	1.1	0.2
Asian	0.1	0.2
Spanish	2.4	2.4
TOTAL	14.7	13.0
Women	1.0	38.6

An examination of Table XXXVI reveals that women employed in apprenticeship programs have made only very small gains, numerically and proportionately. While women constitute 38.6% of the population in Michigan, there is only 1% female representation among apprentices. This pattern is also evidenced at the national level, where women apprentices represent 1.4% of all apprentices. Women are least represented in the largest apprenticeship programs, all of which are major construction and manufacturing apprenticeships holding a membership of more than 6,000. Table XXXVII presents a breakdown of female participation in the twelve major trades which constitute the largest apprenticeship programs in the nation.[48]

Though these twelve programs represent a large share of all the apprenticeship opportunities, women have the smallest percentage of the total number, as Table XXXVII suggests. Greatest female representation is reported among electrical workers (2%) and painters (2.4%). Least female representation is reported among plumbers, tool and die makers, structural steel workers and bricklayers.

Table XXXVII
WOMEN IN APPRENTICESHIP PROGRAMS AT THE NATIONAL LEVEL IN 1976 THAT HAVE MEMBERSHIP OF 6,000 OR MORE PERSONS

Major Trade	No. of women	%	No. of apprentices
Auto and related	26	.3	8,223
Bricklayers	14	.2	6,657
Carpenters	271	.8	33,437
Electrical workers (N.E.C.)	121	2.0	6,196
Electricians	237	.8	31,135
Machinists	245	1.6	15,237
Painters	144	2.4	6,057
Plumbers	36	.2	13,138
Pipefitters	172	1.3	16,850
Sheetmetal workers	57	.5	10,753
Tool and diemakers	172	2	7,677
Structural Steel workers	18	.2	10,906

In studying the problems of women in apprenticeship, RJ Associates concluded that "the lack of information on the skilled trades severely limits women's knowledge of and participation in courses in school which can be beneficial in gaining access to apprenticeship and in developing basic skills useful on the job."[49] Apprentices and applicants for apprenticeship programs surveyed in their research also noted that "the most useful preparation for apprenticeship . . . would be experience with tools and vocational courses in their field of specialty."[50]

The enrollment trend data in Michigan indicate that women remain concentrated in traditional vocational programs, such as non-wage earning Consumer Homemaking, Health and Office/Business. Thus female secondary students in Michigan vocational programs appear to lack exposure to related apprenticeship experiences and useful information necessary to make the smooth transition from high school into apprenticeship programs or into job opportunities that would orient them toward apprenticeship employment. Clearly the skills women develop in traditionally female vocational programs do not lead to employment in jobs where apprenticeship related skills can be acquired.

Women in the Labor Unions

Of the more than 35 million women workers in the United States, only about 4% are members of labor unions. Three-fourths of those women belong to twenty-one labor organizations out of a total of 212 such labor organizations, associations and unions. Over half of the female labor union members belong to just one of twelve labor unions. The two largest garment unions, for example, include the greatest numbers and percentages of female members. The other unions, in order of female membership, include International Brotherhood of Electrical Workers, Communication Workers of America, International Brotherhood of Teamsters, United Automobile Workers, International Union of Electrical Workers, Retail Clerks International Association, and the Hotel and Restaurant Workers.[51] Thus, because most women in the labor force are not members

47. *Problems of Women in Apprenticeship*. RJ Associates, 1977.
48. *Ibid.*
49. *Ibid.* page 8.
50. *Ibid.* page 12.
51. *Report on Women in America*. U.S. National Commission for UNESCO/U.S. Department of State, 1977.

of labor unions, they are not only paid lower wages but lack job security, retirement, and other fringe benefits which unionized occupations provide through collective bargaining. In addition, very little data are available on the numbers of women in decision-making positions in the unions. However, given the relatively small percentage of the female work population who belong to unions, there appears to be a lack of women in union positions who can encourage collaboration among union and education personnel to address the issues of sex role stereotyping in the labor force.

Summary of Sex Bias and Role Socialization in Vocational Education as It Affects the Labor Market

In summary, vocational preparation at the secondary school level is a critical factor in defining occupational and economic options for students. Employers most frequently seek out employees whom they perceive are traditional work role models for males and females. A direct result of these biased expectations is a concentration of women in various low-wage occupations and industries. Such occupational clustering is a primary factor in lower than average annual earnings for women. These earnings differences have increased since 1965 and remain, even after adjusting for such factors as education, work experience and occupational choices.

It is imperative that women begin more concentrated preparation in vocational education programs that provide greater wage and advancement potential. The sharp increase of females with children who are entering the job market out of economic necessity, and the rising rates of divorce and/or separation contribute to the need for vocational preparation in non-traditional occupational fields among females. According to the Department of Labor, women will account for roughly half of the labor force growth during the next years. New labor force projections show that by 1990 the main growth of labor force participation will occur in the 25-54 year old female worker. Data demonstrate that greater wage potential and advancement opportunities for these workers will exist in the occupational fields dominated by males.

The long-term impact of sex role stereotyping in vocational education programs is therefore demonstrated in the following ways:

- Occupational Clustering: Occupational clustering of adult females and males in the labor market at national and state levels reflects similar clustering patterns in secondary vocational education programs. A majority of young females in high school vocational programs choose either non-wage earning Consumer Homemaking courses or enroll in the Office and Business curriculum. A majority of adult female workers in the job market fill either clerical or service jobs. Just as a majority of young men in secondary vocational programs select either Technical, Distributive Education or Trade and Industrial classes, the heaviest distribution of adult males in the work force is reported in the craft, operative and professional-technical categories.
- Wage Earnings: The annual median wage earnings of women, who are clustered in lower paying jobs, are less than men's earnings. The wage differentials among young adult workers, both males and females, can be measured immediately after graduation from a secondary vocational program. Wage differentials among young men and women in similar occupational fields suggest that given the same minimum vocational competencies required for graduation, females continue to earn less than males on an hourly basis.
- Vocational Education Placement: Placement of female students into non-traditional vocational programs does not alone guarantee equal wage earnings. However, such placement will increase their potential for higher income, career advancement and job mobility.
- Access to Apprenticeship and Unions: The traditional secondary vocational training of women precludes the possibility of preparing for and entering apprenticeship programs. In turn, limited access to apprenticeship opportunities is a direct contributor to weak representation of females in the membership and in decision-making positions in unions, particularly those unions in the skilled trade areas.

Section VII
THE RELATIONSHIP OF ECONOMIC STABILITY TO VOCATIONAL PREPARATION

Overview

For both females and males the ability to secure, hold and advance in a job is a major determinant of economic stability. For years the myth that women would marry and be supported by a spouse contributed to the assumption that young females needed less preparation for the job market than did young males who were viewed as future breadwinners and heads of single-paycheck families. However, today nine out of ten women will work outside the home at some time in their lives and will be drawing upon their vocational preparation when entering the labor force.

Increased Labor Participation Rates of Women

Today 50.1% of the women in the United States are working or looking for work. Women accounted for nearly three-fifths of the increase in the civilian labor force in the last decade. A most phenomenal increase has been occurring especially among women 25 to 34 years of age. Their labor force participation rate advanced by twelve percentage points to 57% between 1970 and 1976, and reached nearly 59% in early 1977.

Personal Characteristics

The majority of women in this 25-34 age range (64%) are married, live with their husbands, and have children at home—factors which traditionally perpetuated the belief that married women with children don't have to work. The Department of Labor reports that the number of women working with children under eighteen years of age has more than tripled since 1950.

Though some women work to improve the family standard of living or for self-fulfillment, the number of women entering the job market out of economic necessity is increasing at a sharper rate than the rate of increase of those women who enter for

other reasons, as Table XXXVIII points out.[52]

The data reported in Table XXXVIII indicate the increased labor force participation of all females, regardless of population characteristics. Married women are less likely to be labor force participants than divorced or separated women or never married women. However, almost two-fifths of all women workers are married and living with their husbands.

Table XXXVIII
MARITAL STATUS OF WOMEN WORKERS IN 1950 AND 1975

Marital Status	1950 N (in 1000's)	1950 % of population	1975 N (in 1000's)	1975 % of population
Never married	5,621	50.5%	8,464	56.7%
Married (husband present)	8,550	23.8%	21,111	44.4%
Divorced or Separated	723	A/47.4%	4,479	64.8%
Widowed	2,901	B/36.0%	2,453	24.3%

A/separated only B/widowed or divorced

Family Income Contributions

Among all married full-time female workers in 1974, the median contribution was nearly 40% of the total family income. About 12% of all married women workers contributed half or more of the family income.

According to the Bureau of Labor statistics, well over half of the 47.3 million husband-wife families in March 1976 were multi-earner families in 1975. "The concept of a family where the husband is the only breadwinner, the wife is the homemaker out of the labor force, and [where] there are two children may be useful for many illustrative purposes," comments the Women's Bureau, "but it does not represent the typical American family of the mid 1970's. Among husband-wife families in 1975, only 7 out of 100 families fit this description."[53]

Female Heads of Household

Out of the 56.7 million families in the United States in 1976, 7.7 million were headed by women. And although women were only 14% of all family heads, they made up 48% of all poor family heads. Black women constituted 4% of all family heads; yet they were 21% of all those with low incomes. In summary, one-third of all families headed by women were poor—more than five times the proportional percent rate for male heads of families.

Women in Poverty

Among those persons reported to be living in poverty in 1976, females out-numbered males by more than four million.

One of the primary reasons poverty is more prevalent among women is that women characteristically have lower wage earnings than men. Table XXXIX demonstrates that among women who worked in 1974, the largest numbers of those who were poor had jobs in traditionally female, low-paying occupational fields.[54]

It is significant to note that the poverty rates of women exceeded those of men in all occupational fields. The largest differentials were reported for women as private household workers, other service workers, clerical and sales workers. As Table XXXIX indicates, among women who worked in 1974, the largest numbers of those who were poor were employed in the traditional, lower-paying occupations: service, clerical and sales, and private household areas.

Given the fact that Michigan is second only to Mississippi in the percentage of its population on welfare, the challenge to Michigan educators to increase the mobility of female vocational graduates into non-traditional fields is great. Recent reports issued by Michigan State University's School of Business Administration indicate that 7% of Michigan's nine million residents require welfare supplements.[55]

Table XXXIX
OCCUPATION OF LOW-INCOME WAGE AND SALARY WORKERS BY SEX IN 1974
(Persons 14 years and over)

Occupation Group	N (in thousands) Women	N (in thousands) Men	Poverty Rate Women	Poverty Rate Men
TOTAL	2,731	2,457	6.7%	4.6%
Professional-Managerial	168	166	2.3%	1.3%
Clerical and Sales	677	179	4.1%	2.7%
Craft and Kindred	20	360	3.5%	3.3%
Operatives, including Transport	400	509	7.3%	4.9%
Laborers, ex. farm	34	543	7.1%	9.9%
Farm laborers, managers Supervisors	113	286	23.3%	19.9%
Service workers, ex. private household	882	409	11.6%	7.4%
Private Household Workers	437	6	21.7%	6.9%

Unemployment

Because women experience significantly higher unemployment rates than men, it is difficult for many women to "work" their way out of poverty. In 1976 the jobless rate in the nation stood at 8.6% for women; for men the jobless rate was 7.0%. In 1976 women who headed families had an unemployment rate of 9.8%, while 25.6% of the poor women family heads were unemployed. The comparable rates for male family heads were 5.0% and 15.9% respectively.

To what degree sex discrimination prevents women—both minority and white—from taking as full advantage of job market opportunities as their male counterparts is difficult to measure. However, the data suggest that one of the reasons women do not fill the same jobs as men and remain in poverty is because of limited vocational training at the secondary level which provides them with less versatile, less remunerative work skills.

Clearly the female unemployment rate in Michigan is higher than for males, and women remain unemployed longer than men. While the reduction of sex role stereotyping in secondary vocational education programs may not directly contribute to a decrease in Michigan female employment, a reduction of sex role stereotyping in Michigan secondary schools will at least create an educational environment which encourages increased enrollment of females in traditionally male dominated fields. Thus females can be provided with traditionally male job skills which, according to the data, create a more solid economic base on which to draw should employment trends persist more to the disadvantage of females.

52. Women's Bureau, U.S. Department of Labor from data published by the Bureau of the Census, U.S. Department of Commerce.

53. *Project on the Status and Education of Women Newsletter*, Project on the Status and Education of Women, June 1977.

54. U.S. Department of Commerce, Bureau of the Census, Current Population Report, P-60, No. 102, January 1976.

55. *Michigan State Economic Record*, Michigan State University, April 1978.

Summary of the Relationship Between Economic Stability and Vocational Preparation

In summary, information on the current and projected composition of the labor force demonstrates that the number of women entering the job market out of economic necessity is increasing at a sharper rate than the increase reported for females who enter the work force for other reasons. More than males, females will likely be single heads of households, live in poverty and will increasingly assume economic responsibility in those families where the husband also draws a pay check. Those occupations which provide a firm economic base and long-range earning potential have been closed to women. Vocational preparation and training in non-traditional occupational fields will develop the ability of adult females to assume productive work, life and citizenship roles.

Section VIII
SUMMARY

The conclusion which emerges from this review of the literature is that sex bias and role stereotyping grow out of a variety of sources and levels in our society, and that vocational-technical education is only one part of a larger educational system which supports traditional sex-related behavior patterns. The primary inhibitors of expanded vocational education options for females and males are traditional cultural socialization patterns which proscribe and prescribe appropriate behavior for young people based on sex. Frequent sources of support for these patterns, practices and belief systems are the home, the peer group, the school, and educational materials.

Educational institutions are a primary socializing agent after parents and the peer group. Through the attitudes, values, behaviors and roles in the educational environment which sustain traditional choices, students learn and are reinforced in sex biased and stereotyped interests in vocational education programs. Although women are as well educated as men in terms of median years of schooling completed, there are differences in the kinds of education, training, and counseling they receive, which direct them into traditional and low paying jobs. Enrollment data at the state and national levels demonstrate that if cooperative efforts among educators, parents and employers have been undertaken to encourage the enrollment of non-traditional students, these efforts have not resulted in significant gains for either males or females.

Vocational education is one of the several educational, economic, social, and political vehicles in the United States which have contributed to the problems of low pay and status for women in the world of work.

Section IX
PLANNING DIRECTIVES

Both the nature and extent of sex role stereotyping requires that significant, long-range changes must be instituted within and outside the educational sector to bring about expanded vocational opportunity for secondary students. Based upon this review and previous research, the project staff recommends that consideration be given to the following planning directives.

1. *Development of a procedure to systematically monitor vocational education data.*
   An evaluation procedure should include a baseline data system to collect appropriate information to make comparisons regarding (1) enrollment, (2) job placement, (3) vocational graduate earnings, (4) vocational graduate survey responses, (5) apprenticeship placement program, (6) program staffing, and (7) other areas identified by VTES as being critical to the elimination of sex role stereotyping.
2. *Development of a long-range planning needs assessment instrument.*
   Administrators of vocational education programs should be provided with a tool that assists them in identifying sources of sex role stereotyping in vocational education programs. Data and information from this assessment instrument should be easily transferred into long and short-term program objectives and work statements for the future. Possible consideration should be given to modify the existing long-range planning process to include information concerning sex bias.
3. *Implementation of a compliance reporting system at the local level.*
   The compliance reporting system should generate more accurate, current information regarding sex distribution patterns in vocational education programming. The reporting system should require a moderate amount of time and paperwork on the part of local school systems and should be coordinated with the annual reporting enrollment system already in place.
4. *Sponsorship and assistance in providing vocational education administrator and faculty workshops on sex bias.*
   To provide vocational education staff with an information base and to increase their skills in recognizing and eliminating sex role stereotyping, the workshops should include the following components: (1) legal and compliance regulations, (2) resources for vocational program planning and evaluation, (3) information on sex role stereotyping and role socialization, (4) models of effective bias-free vocational education programs and units, and (5) resources for the development and identification of non-biased instructional resources.
5. *Sponsorship and assistance to research and develop projects designed to recruit more non-traditional vocational education students.*
   While the primary purpose of such projects would be to balance the enrollment of females and males in vocational education programs, a secondary objective addressed in such projects would be the identification of factors in the student population which cause or correlate with sex role stereotyping and sex bias in vocational education. Such factors might include (1) student attitudes, (2) familial influences, (3) peer group relationships, (4) support groups, and (5) student role models.
6. *Increased visibility of the resources, both human and non-human, which are available to local educational systems to address the issue of sex role stereotyping in vocational education.*
   While the elimination of sex role stereotyping in vocational education is a relatively new issue, there currently exist bibliographies, audio visual materials, research and diagnostic tools, training programs, communication networks and personnel to assist local school systems to address the issue of sex role stereotyping in vocational education. However, many of the resources are scattered and thus are not readily acces-

sible. Identifying and collecting such resources at a central location within Michigan would serve to build the information base to which vocational staff could turn for assistance in program planning and implementation.

7. *Investigation of the nature of the pre-vocational opportunities to students at the junior high school level.*
   The project's informal, preliminary assessment of the secondary vocational feed-in system indicates that further research should be directed to the nature, variety, and extent of student participation in pre-vocational/career exploration programs. The assignment of students to classes and more specifically, the range of elective and required classes offered to junior high school students, appear to be critical factors affecting the selection and placement of males and females in secondary vocational curriculums. Continued emphasis on improved vocational programming at the secondary level – without an examination of the feed-in system and processes – may have limited long-range impact.
8. *Development of, and assistance with, implementing a monitoring system of counseling and guidance programs.*
   Included in the monitoring of counseling and guidance programs should be (a) availability and accessibility of the counseling staff to female and male students, (b) balanced distribution of males and females to counseling staff, (c) bias-free career/guidance materials, interest inventories, and appraisal instruments, (d) equal representation of males and females on the counseling and guidance staff, (e) accurate record-keeping of student placement and follow-up records, (f) development of programs and information on course offerings, career choices, non-traditional work opportunities, etc., and (g) in-service workshops on sex role stereotyping.
9. *Establishment of a procedure/process to systematically sample local vocational programs objectives.*
   Vocational programs objectives should be sampled to ensure that the elimination of sex role stereotyping is incorporated as a separate objective and where appropriate as a sub-objective of vocational program development. Among the criteria to be included in the review are (a) advisory committee representation, (b) composition of vocational instructional and administrative staff, (c) curriculum materials, (d) course content, (e) policy, (f) timetables and (g) provisions for modification and remedial action.
10. *Discussion of alternative long-range plans to collaborate with populations outside the educational system to eliminate sex role stereotyping in vocational education.*
    The efforts within the educational system to reduce sex-role stereotyping can in large part be constrained by parents, employers, unions, union joint advisory councils, vocational advisory councils and peers. Increased attention should be directed to (a) targeting populations, (b) identifying resources in these populations, and (c) sketching models of ways to include the target populations.
11. *Creation of a state communications network to collect and disseminate current information on sex role stereotyping in vocational education.*
    The findings from the project's field research indicated that educators perceive there is a sparse base of information regarding the issue of sex role stereotyping in vocational education. Also, many educators were not able to identify resources to which they could turn for more information and assistance at their schools. A repository center, established at the state level, should periodically disseminate information regarding resources, program models, research, innovative problem-solving approaches, and related labor market developments.
12. *Examination of local efforts to prepare secondary students for admission to apprenticeship programs.*
    Entrance and exit data from apprenticeship programs indicate that in comparison to male candidates, significantly fewer female candidates seek admission to and complete training in apprenticeship programs. To what degree course content, counseling programs, informal assistance in preparing to meet written and oral pre-apprenticeship standards, and school ties to companies and unions affect the participation rate of females and males in pre-apprenticeship vocational training needs further examination.
13. *Collection and analysis of the perceptions of key persons in selected audiences.*
    Continued efforts to eliminate sex role stereotyping in vocational education should include dialogue among the Office of Non-Sexist Education, VTES staff and key persons representing (1) advisory councils, (2) post secondary institutions with vocational education programs, and (3) junior high school pre-vocational programs. Their perceptions of solutions to the problem of sex bias in vocational education should be collected. This information should be used as a basis for designing four or five model recruitment programs.
14. *Pilots of model recruitment programs to encourage interest and participation of females and males in non-traditional vocational programs.*
    To address the need to expand vocational opportunities for secondary students, a model program should include (a) samples of written and visual materials depicting students into non-traditional jobs, (b) activities focusing on the issue of sex-role stereotyping to incorporate into vocational courses and units, (c) group counseling designs, (d) suggestions for including non-traditional role models in vocational classes, (e) on-the-job site exposure to the physical and social demands of filling a non-traditional job, and (f) improved placement systems to provide non-traditional work experience. VTES should encourage both the design and pilot test of recruitment models.
15. *Continual revision and updating of VTES state plan goals and objectives.*
    As current trends with regard to sex role stereotyping and sex bias in vocational education programming, enrollment and staffing are identified, the goals and plans in the Michigan Five Year Plan should be reexamined. Modifications in the Plan should reflect new awarenesses which research uncovers.
16. *Development of long-range plans to coordinate project activities with those undertaken by the Sex Equity Coordinator.*
    Dialogue between project staff and the Sex Equity Coordinator on these planning directives should ensure that project activities are also coordinated with the Office of Non-Sexist Education, Michigan Department of Education. A list of objectives should be drawn up jointly between the project staff, the Sex Equity Coordinator, and the Office of Non-Sexist Education. Activities initiated under the auspices of each unit should supplement the objectives and underscore the broader objectives in the Five Year Plan.

APPENDIX A

The legal framework
for prohibiting sex discrimination.

Historical Overview of Michigan Legislation

Additional facilitators of expanded vocational education options, are current state and Federal laws which mandate change and regulatory structures and roles which monitor progress. A history of the Michigan legislation follows:

"In 1955, soon after the 1954 U.S. Supreme Court decision in Brown v. Board of Education of Topeka, the Michigan Legislature passed the Fair Employment Practice Act, which was amended in 1966, by Public Act 349, to prohibit discrimination in employment on the basis of sex. In that same year, the Legislature, through Public Act 127 of 1966, directed the Michigan Department of Education to conduct an annual social studies textbook survey giving special attention and consideration "to the degree to which the textbook fairly includes recognition of the achievements and accomplishments of the ethnic and racial groups . . ." Although Act 127 does not specifically state that textbooks shall be examined on the basis of their fair inclusion of the achievements and accomplishments of women, a number of textbook reviewers who assisted with the annual social studies textbook review did review the books from this standpoint.

In September, 1971, and again in June, 1975, the Governor issued "Executive Directives" establishing policy within state government in Michigan to provide equal opportunity in the state classified service on the basis of merit, efficiency and fitness, and without discrimination because of race, color, religion, sex or national origin.

In 1972, the Michigan Legislature passed a series of acts to further guarantee the rights of individuals in Michigan. Public Act 116 prohibits discrimination in obtaining public accommodations because of sex; Public Act 267 prohibits discrimination in employment because of sex. Further, the Michigan Legislature, in June of 1972, in adopting identical joint resolutions (SJR "66" and HJR "LLL"), ratified the proposed Equal Rights Amendment to the Constitution of the United States which relates to equality of persons regardless of sex. Public Act 138 of 1972 amended the Michigan School Code to permit girls to participate in all noncontact interscholastic athletic activities and provided, further, that selection of competing teams can be solely based on athletic ability.

More recently, the Michigan Legislature in Public Act 353 of 1974 directed the Department of Education to "develop guidelines for expanding the existing school curriculum to include materials on the culture of ethnic, religious, racial minority peoples and contributions of women, as defined by the department of education" Guidelines shall include:

"(a) History and heritage of these ethnic, religious, racial minorities and contributions of women.

"(b) Living conditions, beliefs, and customs of these ethnic, religious, racial minorities and contributions of women.

"(c) Problems and prejudices encountered by these ethnic, religious, racial minorities and contributions of women.

"(d) Word meanings and usage as employed by these ethnic, religious, racial minorities and contributions of women.

"(e) Culturally related attitudes and behavior of these ethnic, religious, racial minorities and contributions of women."[56]

Overview of Federal Legislation

Federal legislative and Presidential Executive Orders began in 1963 and the most recent Vocational Education Amendments of 1976 continue the pattern of outlawing discrimination based on sex and race in education and employment. The 1978 Supreme Court Decision in the Bahke case affirmed the legality of Affirmative Action plans growing out of Title IX legislation, even though it dissallowed the quota system as a legal means of achieving equitable representation of minorities and women in employment and education. A summary of Federal legislation follows:

Equal Pay Act of 1963

The Equal Pay Act of 1963 was approved as an amendment to the Fair Labor Standards Act. This action was the result of efforts from womens' organizations, unions, and other interest groups. The Equal Pay Act prohibits sex discrimination in payment of wages, overtime, and fringe benefits, for equal work in jobs requiring similar skills and responsibility and performed under similar working conditions. This law applied to most workers in the public and private sectors. In addition, the law prohibits employers from reducing the wages of any employee in an effort to equalize pay rates between the sexes. It also prohibits labor unions from causing an employer to discriminate against an employee by violating the equal pay provision. (Steele, 1974).

The Civil Rights Act of 1964

Title VI of the Civil Rights Act of 1964 prohibits discrimination by race, color, or national origin in educational programs receiving Federal funds. This legislation covers students and others and is administered by the Office of Civil Rights, U.S. Department of Health, Education, and Welfare.

Title VII of the Civil Rights Act as amended by the Equal Employment Opportunity Act of 1972 forbids discrimination based on race, color, religion, national origin, or sex in all aspects of employment by employers of 15 or more workers, by public and private employment agencies, and by public and private educational institutions.

The Act specifically prohibits discrimination in hiring or firing; wages; fringe benefits; classifying, referring, assigning, or promoting employees; extending or assigning use of facilities; training, retraining, or apprenticeships; or any other terms, conditions, or privileges of employment. This includes work assignments; sick leave, vacation, and overtime; insurance and health benefits; retirement, and advertising jobs by sex. (Steele, 1974). Title VII is enforced by the Equal Employment Opportunity Commission (EEOC) with respect to non-Federal employees and has issued a booklet to aid employers entitled "Guidelines on Discrimination Because of Sex." (U.S. Department of Labor, 1977).

Executive Order 11246, as amended by Executive Order 11375, (effective October 14, 1968)

This order requires Federal contracts to include language by which contractors pledge not to discriminate against any employer or applicant for employment because of sex, race,

56. *Guidelines for Eliminating and Preventing Sex Discrimination*. Michigan Department of Education, April 1976.

color, religion, or national origin. The contractor must further pledge to take affirmative action to ensure non-discriminatory treatment. Such action must include employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training including appreniceship. Some contracts of $10,000 or less are exempt by regulation. (U.S. Department of Labor, 1977, 977)

The Office of Federal Contract Compliance Programs (OFCCP) has issued guidelines to standardize the compliance review procedure and guidelines for contractors to use in developing and maintaining written affirmative action programs. These guidelines set out requirements for such matters as the utilization analysis of each job group at a facility, establishment of goals and timetables for correcting deficiencies in the utilization of women and minorities, internal and external dissemination of an equal employment policy, and management responsibility for implementing and monitoring the policy. (U.S. Department of Labor, 1977, 977).

One problem with these affirmative action plans is the determination of utilization of women and minorities. Determination is based on availability figures. Availability figures are very difficult to ascertain with any degree of accuracy but are mainly obtained through data on the numbers of women and minority persons being trained and educated in the specific occupational categories.

Education Amendments of 1972

Title IX prohibits discrimination on the basis of sex in educational programs or activities which receive Federal funds. This law applies to all public pre-schools, elementary and secondary schools, vocational education institutions, undergraduate, graduate, and professional institutions, as well as many private schools.

The Office for Civil Rights of the Department of Health, Education, and Welfare issued effectuating regulations as of July 21, 1975. These cover such matters as recruitment and admission of students, financial and employment assistance to students, access to course offerings and athletic programs, and housing as well as employment policies. (U.S. Department of Labor, 1977, 977).

Title IX of the Education Amendments of 1972 has potential for eliminating sex bias in admissions, programs, and staffing patterns in public schools, vocational schools, and higher education. This act should help to eradicate sex-segregated classes and policies and practices which deny young women access to male-dominated vocational programs in secondary, post-secondary, and higher education institutions (Steele, 1974).

Vocational Education Amendments, 1976

The Vocational Education Amendments for 1976 require each state receiving Federal funds for vocational education to prepare detailed annual and long range plans (5 years) describing their entire program and the objectives to be obtained each year with respect to sex and racial/ethnic role stereotyping and bias and other specific areas of student variability and needs.